

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 633.—Vol. XVII.

LONDON, SATURDAY, OCTOBER 9, 1847.

[PRICE 6D.]

**TO BE PEREMPTORILY SOLD, BY AUCTION.**  
**MR. EDISBURY will SELL, BY AUCTION, in One Lot,** pursuant to a decree of the High Court of Chancery, made in a cause of "Bitch against Price," with the approbation of Sir William Home, one of the Masters of the said Court, at the Lion Inn, Wrexham, in the county of Denbigh, on Tuesday, the 15th day of October, 1847, at Three o'clock in the afternoon, the **FREEHOLD ESTATE**, consisting of **PLAS-MOSTYN FARM, COLLIERIES, AND MINERALS OF COAL AND IRONSTONE.**

**SITUATE IN THE SAID PARISH OF WREXHAM.**  
Particulars may be had gratis: in London, at the said Master's chambers, Southampton-buildings, Chancery-lane; Messrs Milne, Parry, Milne, and Morris, solicitors, Harcourt-buildings, Temple; of Messrs. Hughes, Fairclough, and Webb, solicitors, Clement's Inn; and in the country, of Mr. Esaupeus Pickering, mine agent and valuer, Wrexham; Mr. Jones, solicitor, Brynhyfryd, Ruthin; and Mr. Humphreys Jones, solicitor, Wrexham; at the place of sale; and at the principal inns, in Ruthin, Liverpool, Manchester, Chester, Shrewsbury, Wolverhampton, and Birmingham.

**WALL'S END COLLIERY.—TO BE LET,** and entered upon on or after the 30th November next, for such a term of years as may be agreed upon, all that current-going COLLIERY, well known by the name of **WALL'S END COLLIERY**, at present held by William Russell, Esq., under lease from the Dean and Chapter of Durham, comprising the COAL MINES under the whole of the lands in the township of **WALL'S END**, in the county of Northumberland.  
The Low Main and the Beaumont Seams, which have been bored to, remain throughout untouched; and the Beaumont Seam supplies the vend of the existing colliery. The colliery is contiguous to, and has shipping berths in, the River Tyne.  
Plans of the workings of the colliery, and further particulars, may be known on application to Mr. E. F. Boyd, Urpeth Colliery, Chester-le-Street; or at the office of the Registrar of the Dean and Chapter of Durham, Durham.  
Durham, Sept. 11, 1847.

**STRONG MIXING PIG-IRON.—The YSTALYFERA**  
IRON COMPANY beg to solicit ORDERS for their **ANTHRACITE PIG-IRON.** This iron mixes well with Scotch pig—imparting to it strength and elasticity, and receiving from it a portion of its softness and fluidity. No. 3 Pig is recommended for mixing with soft iron—Nos. 1 and 2, for machinery castings, requiring great soundness and strength. At this period, when cast-iron is so much employed in the construction of bridges and other buildings, requiring all the strength and elasticity which the best mixture of metal will afford, it may be interesting to call attention to the characteristics of **ANTHRACITE PIG-IRON**, as reported on by that great practical authority, the late **DAVID MUGGER, Esq., M.L.C.E.:**  
"It greatly exceeds, in strength, in defective powers, and capacity to resist impact, any iron at this time manufactured in the United Kingdom."  
"It now only remains for me to mention a property peculiar to this iron, which was noticed at the time I made the trial experiments, four years ago, but which has been more fully developed in these more recently made. The property referred to is one of great springiness, or elasticity, which communicates a tendency to the bar, in deflecting and breaking, to resume its rectangular form. Bars that had obtained a permanent set of 3-10ths, when afterwards broken, presented but a slight deviation from a right line; and in no case, did the curvature exceed one-fourth of a tenth."  
"It was also remarked, that most of the fractures, in breaking, presented a regularity of grain throughout, resembling the structure of water-hardened steel."

**HOT-BLAST WITHOUT COAL, LABOUR, OR REPAIRS.**  
**DIXON AND BUDD'S PATENT.**  
Apply for particulars, or to inspect the process in operation on six blast-furnaces, to **J. Palmer Budd, Esq., Ystalyfera Iron-Works, near Neath.**  
Dated June 22, 1847.

**PATENT GALVANISED IRON AND WIRE ROPE WORKS,**  
**MILLWALL, POPLAR.**  
**ANDREW SMITH** begs to inform the Mining, Railway, and Shipping interests, that he has obtained a **PATENT FOR IMPROVED METHOD OF GALVANISING IRON**, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £30, under the ordinary process. The rope is extensively used in damp situations, for mining and railway purposes, and the ships' standing rigging.

**ASSAYING AND ANALYSIS.—Mr. MITCHELL** begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTORIES, that he continues to CONDUCT METALLURGICAL ANALYSES of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY,  
**35, HAWLEY-ROAD, KENTISH TOWN, LONDON.**  
to which address communications are to be forwarded.—Instruction in all branches of assaying and analysis as usual.

**ADCOCK'S PATENT SPRAY PUMP.—This important**  
INVENTION having been PERFECTED, and brought into SUCCESSFUL PRACTICAL OPERATION at **LIANHIDDEL**, at this belonging to **R. J. Blawie, Esq., M.P.** Llantrisant Abbey, near Newport, Monmouthshire, the **PATENT** is ready to RECEIVE, and to execute, ORDERS.—Apply to **Henry Adcock, C.E.**, at his office, 137, Strand, London, where pamphlets, descriptive of the invention, may be had; at the office of the Mining Journal, 26, Fleet-street; and through any respectable bookseller—price 6d.

**SUSPENSION AND COMPOUND WROUGHT-IRON**  
BRIDGES.—Just published, TWO BEAUTIFUL PICTORIAL ENGRAVINGS—One exhibiting a VIEW OF MR. MOTLEY'S NEW PLAN OF SUSPENSION, erected at **TWENTON**, near Bath, nearly 240 feet long; the other representing his novel PLAN for a **WROUGHT-IRON BRIDGE** at **CLIFTON**, near Bristol, upwards of 600 feet span.  
To be had of Mr. John Weale, Architectural Library, 69, High Holborn; and at the office of the Mining Journal, 26, Fleet-street, London.  
Price: plain, 1s. each; coloured, 1s. 6d. each.

In the press, and shortly to be published, with several illustrations, price 1s., **THE PERRAN CHERRYBEAM: A Comic Poem.** By the author of the *St. Agnes Bear Hunt*—Illustrative of Cornish dialect and phraseology—being the ADVENTURES OF **DANNIEL DADDLE** AND **JIMMY LINKIN**, "And what befel them is here put in, And the unsuitableness of shutting in."

Truro: J. B. Netherton. Dated Sept. 30, 1847.

**PATENT IMPROVEMENTS IN CHRONOMETERS,**  
WATCHES, AND CLOCKS.—**E. J. DENT**, 93, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from £4 to £10 extra. Gold horizontal wa cases, with gold dials, from 8s. to 15s. each. **DENT'S PATENT DIAPHRAGM**, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use, 1s. each, but to customers gratis.

**CRICKET STEAM-BOAT.—HENRY BAKER** begs to call the attention of Steam-boat Proprietors, Engineers, and persons who may possess steam-engines, to his **NEWLY-IMPROVED STEAM-GAUGE**, for high or low pressure, and for showing the temperature of the steam. The gauges on board the ill-fated *Oriskany* were useless—according to the evidence adduced at the inquest—on account of the water and mercury becoming intermixed, at the pressure of 40 lbs. per square inch. H. B.'s gauges are subject to no such defects, but will show any pressure with accuracy; and had they been used, the accident might have been prevented: they are fitted up in a mahogany case, price £2 2s. each.—**HENRY BAKER**, Barometer, Thermometer, and Steam Instrument Maker, No. 50, HATTON-GARDEN.

**IMPORTANT TO RAILWAY AND STEAM NAVIGATION**  
COMPANIES, MANUFACTURERS, AND ENGINEERS.  
**W. BROTHERTON & CO'S**  
**PATENT LUBRICATING FLUID (or Animal Oil) FOR ALL DESCRIPTIONS**  
OF MACHINERY.

**W. B. & CO.** have the pleasure to state, that the above article is extensively used in her Majesty's Steam Navy, and by several of the principal Steam Navigation and Railway Companies, and is pronounced by them, and by the first practical engineers of the day, to be far better adapted for the purposes of lubrication than any other article hitherto used for such purposes. The Patent Lubricating Fluid is equally applicable for the most intricate and fine pieces of machinery, as for the heaviest bearings of the steam-engines. It is cheaper, much more economical, and cleaner than oils at present in use; is free from smell, and calculated to effect a vast saving in the expenditure of working steam powers. Further particulars can be had, and testimonials seen, by application to the manufacturers, **W. BROTHERTON & CO.**, Hungerford Wharf, Strand, London.  
N.B.—The above article will burn in lamps, and give a light equal to the best sperm oil.

**THE PATENT OFFICE AND DESIGNS REGISTRY**  
No. 210, STRAND, LONDON.  
INVENTORS will receive (gratis), on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION of INVENTIONS and DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and Co. offer their services, and the benefit of many years' experience, in SECURING PATENTS and REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute. Also, in MECHANICAL and ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.  
Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Leicester-street).

**PRACTICAL GEOLOGY AND MINING.**  
**KING'S COLLEGE, LONDON.**  
During the ensuing Michaelmas Term, a COURSE of about TEN LECTURES, on the PRACTICAL APPLICATIONS OF GEOLOGICAL SCIENCE, will be delivered by Professor Ansted, M.A., F.R.S.—Fee for the course, £1 1s. The first lecture will be delivered on Wednesday, October 13.  
The syllabus may be obtained by application to the Secretary of King's College, London, September, 1847.

**STEAM TO INDIA VIA EGYPT, MALTA, ITALY,**  
**ALEXANDRIA, AND THE PENINSULAR PORTS.**  
**PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA.**  
The Peninsular and Oriental Steam Navigation Company BOOK PASSENGERS for CEYLON, MADRAS, AND CALCUTTA direct, by steamers leaving Southampton on the 30th, and for Alexandria, en route to Bombay, on the 1st of every month.  
A steamer from Southampton leaves the 1st and 20th of every month for Malta, whence are steamers to Naples, Genoa, Civita Vecchia, three times a month.  
STEAM TO CORUNNA, OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.  
A steamer leaves Southampton on the 7th, 17th, and 27th of every month.  
Apply at the Peninsular and Oriental Steam Navigation Company's offices, 51, St. Mary Axe, London, where only passages can be secured throughout.

**THAMES ECONOMIC STEAM-BOAT COMPANY.**  
(REGISTERED PURSUANT TO ACT OF PARLIAMENT.)  
**ESTABLISHED ON THE PRINCIPLE OF CHEAP AND EQUALISED FARES.**  
Capital £40,000, in 8000 shares, of £5 each.  
On which £3 per share will only be called until after a meeting of the shareholders, approving of a further call to extend the operations of the company.  
No call to exceed 10s. per share.  
The shares may be paid by small instalments, vide Prospectus.  
Each shareholder to receive a bonus of free passage.  
Tickets to the full amount of paid subscription.  
The object in promoting this company is to provide for the public a safe and economical steam communication from London-bridge to Chelsea, Battersea, &c., and from London-bridge to Greenwich, assisted by all the advantages which improved science can suggest. The company will run express boats morning and evening.  
A considerable portion of the shares having been subscribed for, application for the remainder may be made at the office of the company, 134, Upper Thames-street; or to the solicitor, 47, Bedford-row, where prospectuses and plans may be obtained, and every information furnished.  
By order of the board, J. BECKETT.

**ELECTRIC TELEGRAPH COMPANY.**  
LONDON, 345, STRAND, September 1, 1847.  
**COMMERCIAL TELEGRAPH.**  
The works of the lines for commercial communications, between the places enumerated below, embracing a SYSTEM of TELEGRAPHS for COMMERCIAL PURPOSES only, and distinct from that reserved for the special use of railways, being so far advanced as to admit of their completion by the commencement of the coming year, the directors think that the time has now arrived, when it becomes their duty to make known the arrangements which they contemplate for the accommodation of the public.  
STATIONS will be OPENED, in central situations, in the PRINCIPAL TOWNS, whence MESSAGES and DISPATCHES will be FORWARDED TO and RECEIVED FROM ALL THE OTHER STATIONS OF THE ELECTRIC TELEGRAPH COMPANY.  
In order to give to Merchants, Bankers, Manufacturers, and all connected with trade, the greatest possible amount of information, a ROOM will be RESERVED in each of the COMPANY'S STATIONS for SUBSCRIBERS, in which will be received, tabulated, and exhibited, all Intelligence of Commercial or Public Interest—for instance:  
SHIP LISTS, from the various Ports.  
SHARE LISTS, from the various Exchanges.  
PRICES CURRENT.  
STOCK EXCHANGE LISTS.  
CORN MARKETS, from the various Towns.  
PRICES OF LIVE STOCK, &c. &c.

In LONDON, a CENTRAL STATION, suited to the importance of the metropolis, is in COURSE OF ERECTION, in the immediate vicinity of the Bank and Royal Exchange; in this station the whole TELEGRAPHIC NEWS of the COUNTRY will be CONCENTRATED, and FORWARDED IN EVERY DIRECTION. And here, as in other towns, a ROOM will be RESERVED for SUBSCRIBERS.  
The SUBSCRIPTION TO these ROOMS will be TWO GUINEAS per annum, paid in advance, which will entitle SUBSCRIBERS to the RIGHT OF ENTRANCE TO ALL the SUBSCRIPTION ROOMS of the COMPANY—including the Central Station at London.  
The foregoing details some of the advantages of the Commercial Telegraph to subscribers; but the requirements of the public in general will be provided for by the establishment of offices, which will at all times be open for the reception and transmission of messages and dispatches; while the messages will be kept at the various stations, by whom dispatches may be sent out to any part of the town where the communication has been received by Telegraph at the Company's Station.  
Subscribers' Names are received at the Commercial Telegraph Office, where any further information may be obtained.  
The following are the Towns to which the Commercial Telegraph will be first extended:—

London	Manchester	Southampton	Derby	Darlington
Margate	Liverpool	Winchester	Nottingham	Newcastle
Hamagade	Nottingham	Dorchester	Lincoln	Berwick
Dover	Barnsley	Bristol	Sheffield	Edinburgh
Folkestone	Leeds	Gloucester	Bradford	Glasgow
Canterbury	Halifax	Cheltenham	Widnes	Bridlington
Northampton	Rochdale	Peterborough	Lowestoft	Stamford
Coventry	Hull	Yarmouth	Cambridge	Norwich
Birmingham	Malden	Hertford	Chelmsford	St. Ives
Wolverhampton	Tonbridge	Manchester	Ipswich	Ware
Stafford	Gosport	Leicester	York	Colchester

J. LEWIS RICARDO, Chairman.

**COMMERCIAL TELEGRAPH.—That the public may judge**  
of the VALUE of Messrs. BRETT & LITTLE'S TELEGRAPH, in comparison with the DOUBLE NEEDLE TELEGRAPH, a DESCRIPTIVE PAMPHLET OF THE INVENTION, with a Comparative Analysis of their Merits, and the Opinions of the Public Press, is published by W. J. Adams, 59, Fleet-street, price 1s., and may be had of all respectable booksellers, and at the railway stations.  
Tickets to view the instruments can only be obtained of **BRETT & LITTLE**, Farnival's Inn, London.

BY HER MAJESTY'S LETTERS PATENT.  
**FULLER AND DE BERGUE'S VULCANISED INDIA-RUBBER BUFFERS AND BEARING SPRINGS FOR RAILWAY CARRIAGES.**  
The PATENTERS of this NEW and IMPORTANT INVENTION beg to announce to Engineers, Carriage-builders, and Railway Companies (especially those constructing new lines), that they have now completed their arrangements for SUPPLYING the VULCANISED INDIA-RUBBER BUFFERS and DRAW-SPRINGS, for Passenger-Carriages, Waggon, Cattle-Carriages, Engines, Tenders, &c., and are prepared to execute Orders to any extent.  
On several of the principal Lines these Buffers have now been tried for many months past, under very able superintendence, and with decided success. The patentees, therefore, feel justified in stating, that they are prepared to furnish not only a more efficient Buffer than any hitherto in use, but on terms which will affect a considerable saving to Companies in the first outlay.  
Specimens of the various kinds of buffers and draw-springs may be seen, and prices obtained, on application at their offices, No. 9, Arthur-street West, London-bridge, or at their depot, No. 2, David-street, Manchester.  
The patentees will also be happy to furnish full information to all communications by letter, together with drawings of the best mode of application.—The attention of Locomotive Engineers is particularly invited to their BEARING SPRINGS for ENGINES and TENDERS, the recent trials of which have proved most successful.

**FLEXIBLE HOSE-PIPES FOR LOCOMOTIVE ENGINES,**  
RAILWAY CRANES, FIRE-ENGINES, GAS, &c.  
**PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND TUBING**  
OF EVERY DESCRIPTION.  
These pipes are made to stand hot-water without injury—are very superior to leather pipes, or the common India-rubber pipes; and, as they do not become hard or stiff in the lowest temperatures, or require any application when out of use, are particularly well adapted for fire-engines.  
FLEXIBLE TUBING, of every description, for gas, chemical purposes, &c.  
VULCANISED INDIA-RUBBER WASHERS, all sizes, for steam and hot-water joints, &c.—Sole manufacturer,  
**JAMES LYNE HANCOCK,**  
Goswell Meadows, Goswell-road, London.

**VIADUCTS AND OTHER RAILWAY WORK.—The**  
attention of Railway Engineers, Architects, and Contractors is particularly directed to the great advantages to be derived from the application of **SEYSSSEL ASPHALTE**, as the only impervious and permanent covering for arches and roofs, and lining of reservoirs, gutters, &c. The arrangements of CLARIDGE'S PATENT ASPHALTE COMPANY enable it to execute works of any extent with the greatest promptitude.  
In order to guard against the use of spurious materials, it is important that all applications for works should be made direct to this company; and, as a further protection, it is requested that Engineers, Architects, and Contractors, should require a CERTIFICATE, in which the proper description of material has been used.  
Information may be obtained as to all works which have been executed by the company since its establishment in 1839, which will prove that the failure of many works represented to have been done with the genuine material has resulted from the substitution of a spurious one.  
I. FARRELL, Secretary.  
Seysssel Asphalt Company, Stangate, London.

**20000 WANTED, to carry out a LUCRATIVE MANUFACTURE,** where the demand already far exceeds the means of supply. All necessary security will be given, and no previous knowledge of the business is required. To save trouble, no agents need apply.—Address "H. M.," at the office of the Mining Journal, 26, Fleet-street, London.

**TO IRONMASTERS AND OTHERS.—TO BE SOLD,**  
BY PRIVATE CONTRACT, a very powerful BLAST-ENGINE, with a 54-inch steam cylinder, and 108-inch blowing cylinder. Also, a 50-inch and 56-inch STEAM CYLINDERS, and a very strong CAST-IRON BEAM, suitable for a water-engine.  
For the price and particulars apply to Mr. John Pugh, Parkfield Iron-Works, Great Wolverhampton.

**WHEAL BARBARA AND CASCADE MINES.—SHARES**  
in the ABOVE MINES FOR SALE.—For particulars, apply to Mr. William Trenery, Mining Office, 9, St. Michael's-alley, Cornhill, London.

**WANTED, FOR NEW SOUTH WALES, an intelligent and**  
experienced MINE AGENT—one well acquainted with mineral formations, and the strata in which they are generally found—who could undertake to explore a new district of country, where mineral deposits are supposed to exist, and to determine, from surface indications and otherwise, the particular locality in which mining operations would be likely to prove successful; and who would be able to direct all the necessary labour, underground and at grass, of an extensive mine—should such an one be established. He will, probably be accompanied by a dozen of Cornish miners. Salary not less than £300 for the first year.  
Applications (if by letter, post-paid) to Richard Root, mine broker and general agent, Redruth.—Dated 10 mo. 5, 1847.

**MINING OFFICES.—ESTABLISHED THIRTEEN YEARS.**  
**WILLIAM TRENER** begs to inform his friends and the public, that he has REMOVED from No. 50, Threadneedle-street, to  
No. 9, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.

**MR. R. TREDINNICK, MINING AGENT AND DEALER**  
IN EVERY DESCRIPTION OF SHARES.  
THREE KINGS COURT, LOMBARD-STREET, LONDON.

**MINING OFFICES, 1, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.**  
**WATSON AND CUELL, MINE AGENTS.**  
N.B.—STATISTICAL INFORMATION furnished (on application) to SHAREHOLDERS in MINES in Cornwall, Devon, Scotland, Ireland, Wales, and Spain.

**WILLIAM H. SMITH, MINING SHARE AGENT,**  
10, WARREN-COURT, THROGMORING-STREET, LONDON.

**WILSON & FRASER, 2, WELLINGTON-BUILDINGS,**  
LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE FIG-IRON, BAR-IRON, RAILWAY CHAINS, and RAILWAY BARS.

**JAMES LANE, MINING SHARE DEALER**  
75, OLD BROAD-STREET, LONDON.

**BRITISH MINING OFFICES, 41, MOORGATE-STREET,**  
LONDON.—and  
4, STAMP-OFFICE BUILDINGS, MANCHESTER.  
PROSPECTUSES may be had, and SHARES obtained, in the SILVER-LEAD and COPPER MINES connected with these offices, on application to the secretaries, at London or Manchester.  
T. H. TAUNTON, London.  
W. SHEARMAN, Manchester.

**MONEY.—MESSRS. WINSTANLEY & CO., Sharebrokers,**  
inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms: they also BUY and SELL, every description of STOCK and MINING SHARES, at much less commission than usually charged.  
6, Bank Chambers, opposite the Bank of England.

**DYFNGWYM LEAD MINES, NORTH WALES**  
CONDUCTED ON THE COST-BOOK SYSTEM.  
OFFICES—33, OLD JEWRY.  
Where sections and plans of the mine may be seen, and all information obtained.

**ALTEN MINING ASSOCIATION.—The directors of this**  
association hereby give Notice, that a GENERAL MEETING of the shareholders will be HELD at the offices, Winchester-house, 52, Old Broad-street, on Friday, the 22d day of October inst., at One Two o'clock, precisely, for the purpose of receiving the report of the directors, and a statement of the financial accounts, to the 1st of March last.  
The accounts will be at the office, for the inspection of the shareholders, three days previous to the meeting.—Dated this 1st day of October, 1847.  
By order of the board, EDWARD J. COLE, Secretary.

**GREAT SOUTH TOLGUS MINING COMPANY.—The**  
directors hereby give Notice, that SIXTY-FIVE FORFEITED SHARES in this COMPANY will be PUBLICLY SOLD, for the benefit of the company, at the Clarendon Rooms, South John-street, on Friday, the 29th inst., at Six o'clock in the evening.  
By order of the board,  
ROBERT TAYLOR, } Directors.  
GEORGE WOOD, }

**OFFICE OF THE GOVERNOR AND COMPANY OF**  
COPPER MINERS IN ENGLAND, Castle Baynard, 13, Upper Thames-street, London, Sept. 27, 1847.—The Court of Assistants of the Governor and Company of Copper Miners in England hereby give Notice, that a SPECIAL GENERAL COURT will be HELD at the offices of the company, Castle Baynard, No. 13, Upper Thames-street, on Wednesday, the 13th October next, at Two o'clock precisely.  
By order of the Court of Assistants,  
E. YOUNGER, Secretary pro tem.

**TAMAR SILVER-LEAD MINING COMPANY.—Notice is**  
hereby given, that the ANNUAL GENERAL MEETING of the shareholders of this company will be HELD at 44, Finsbury-square, on Thursday, the 31st day of October next, at Two o'clock precisely.—London, Sept. 26, 1847.

**TRELEIGH CONSOLIDATED MINING COMPANY.—**  
A DIVIDEND, being the third, of SIX SHILLINGS per share, or 5 per cent. upon the paid-up capital, has this day been declared, PAYABLE on Monday, the 11th October inst., and on every succeeding Monday, between the hours of Eleven and Three o'clock, with a list, according to a form, which may be obtained at the office, must be left for examination three clear days previous to payment.  
57, Old Broad-street, October 6, 1847. WM. NICHOLSON, Secretary.

**CALLINGTON MINES COMPANY.—At a Quarterly General**  
Meeting of shareholders, held at the offices, 44, Finsbury-square, London, on Wednesday, the 29th Sept., 1847, the following resolutions were proposed and carried unanimously:—  
Resolved,—That the reports and accounts, now read, be received, adopted, and entered in the cost and transfer book.  
Resolved,—That the thanks of the present meeting be presented to the chairman and directors, for their prudent and vigorous management of the company's affairs.  
RICHARD HODGSON, Chairman.

**TINCROFT MINING COMPANY.—At a General Meeting**  
of the shareholders of this company, held at the offices, 44, Finsbury-square, London, on Thursday, the 30th Sept., 1847, the following resolutions, being proposed and seconded, were carried unanimously:—  
Resolved,—That the reports and accounts, now read, be received, adopted, and entered in the minute-book.  
Resolved,—That the thanks of this meeting be presented to the chairman and directors, for the judicious manner in which they have conducted the affairs of this company.  
RICHARD HODGSON, Chairman.

**THE PATENT SAFETY FUSE,**  
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonials to its usefulness, with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."  
Manufactured and sold by the Patentees, **RICKFORD, SMITH, and DAVEY**, Cornborne, Cornwall.

**TO ENGINEERS, RAILWAY CONTRACTORS, MINING**  
AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY AND AXLES of every description.—**JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE** is—after trials on machinery and axles of every kind, and constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.  
References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Great-street, Wellington-street, Blackfriars-road, London.



**OPHIT OF SOLOMON.**—“Whether ‘Ophir’ was on the peninsula of Malacca, contiguous to the China Sea, or at Sofala, on the east coast of Africa, is doubtful. I visited Sofala in her Majesty’s vessel *Leves* and *Barracouta* in 1834; and Malacca, in 1844, in her Majesty’s vessel *Spitfire*; my opinion is in favour of Malacca being the true Ophir. There is a large mountain in Malacca, contiguous to the coast at Malacca, and it abounds in gold. In sailing close along the shore at night, the air was perfumed as if with spices and frankincense. The whole country teems with rich and rare products. Sofala, on the contrary, is a low swampy territory; no mountain is visible; gold dust is certainly obtained there, from the interior, but there are no spices, frankincense, or myrrh. Its altitude prohibits the growth of those articles, while Malacca is specially adapted for them. The transition of the Jews from Malacca, up the coast, to China, was an easy matter; indeed, the Chinese themselves visited the Red Sea and Persian Gulf. About the year A.D. 1150, the Rabbi, Benjamin of Tudela, visited several eastern countries, for the express purpose of ascertaining the residence of the lost tribes. The Rabbi found some of his brethren in Samarcand, China, and Tibet; in the first city he found 50,000 Israelites.”—*Martin’s China.*

**THE GREAT POPULARITY OF HOLLOWAY’S OINTMENT AND PILLS IN THE WEST INDIES, IN THE CURE OF ALL SKIN DISEASES.**—A young gentleman, residing at St. Kitt’s, was afflicted with a most distressing skin disease, commonly termed the “shingles.” He had the best medical advice that could be obtained in the island; but, finding that he derived no benefit from their treatment, he determined on having recourse to Holloway’s ointment and pills, which had a most gratifying effect, for, in a very limited period, these invaluable remedies completely cured him. Mr. T. C. Cable, of St. Kitt’s, writes for the secretary of the statement. Sold by all druggists, and at Professor Holloway’s establishment, 344, Strand, London.

**LONDON AND PROVINCIAL JOINT-STOCK LIFE INSURANCE COMPANY.**—The Directors invite the public generally, also BUILDING SOCIETIES AND BORROWERS, through them or from other parties, to examine the peculiar system and advantages offered by this office. Every description of life assurance, investment, and loan business transacted. Low rates of premium and three-fourths of profits divided. For prospectuses, &c., apply to JOHN MASSON, Secretary, Offices, 30, Nicholas-lane, Lombard-street.

**NATIONAL LOAN FUND LIFE ASSURANCE SOCIETY, 36, CORNHILL, LONDON.** Capital £50,000.—Empowered by Act of Parliament. This institution embraces important advantages with respect to Life Assurance and Deferred Annuities. The assured has, on all occasions, the power to borrow, without expense or forfeiture of the policy, two-thirds of the premiums paid (see table); also the option of selecting benefits, and the conversion of his interests to meet other contingencies or necessity. Assurances for terms of years are granted on the lowest possible rates.

**DIVISION OF PROFITS.** The remarkable success and increasing prosperity of the society has enabled the directors, at the last annual investigation, to declare a fourth bonus, varying from 30 to 55 per cent. on the premiums paid on each policy effected on the profit scale.

EXAMPLES.

Sum.	Prem.	Year.	Bonus added.	Bonus in Cash.	Permanent reduction of Premium.	Assured may Borrow.
£137	£217 15 1	1899	0 11	£16 0 4	£445 0 0	
138	192 3 0	1899	0 11	13 10 2	395 11 1	
139	165 11 0	1899	0 11	11 3 1	346 2 3	
140	116 7 6	1899	0 11	7 18 10	296 13 4	
141	111 0 8	1899	0 11	7 10 4	247 4 5	

The division of profits is annual, and the next will be made in December of the present year. F. FERGUSON CAMROUX, Secretary.

**ON NERVOUS DEBILITY & GENERATIVE DISEASES.**—Just published, the Thirtieth Thousand, an improved edition, revised and corrected, 120 pages, price 2s. in a sealed envelope, or forwarded, post-paid, to any address, source from observation, for 2s. 6d. in postage stamps, illustrated with numerous anatomical coloured engravings. “*MANHOOD: The Cause of its Premature Decline, with Plain Directions for its Perfect Restoration.*” A medical essay on those diseases of the generative organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in Youth, Manhood, and Old Age; with practical remarks on marriage—the treatment and cure of nervous and mental debility, impotency, syphilis, and other urino-genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings, in colour, explaining the various functions, secretions, and structure of the reproductive organs, health and disease; with instructions for private consultation, cases, &c. By J. L. CURTIS and CO., Consulting Surgeons, 7, Fitch-street, Soho-square, London.

**REVIEWS OF THE WORK.**—“*Manhood*,” a medical work. To the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the rash indulgence of their passions, whilst to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health.”—*Chronicle.* “We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, a physician, or a clergyman.”—*Star, Evening Paper.* “*Curia on Manhood* should be in the hands of youth and old age. It is a medical publication, ably written, and develops the treatment of a class of painful maladies which has too long been the prey of the illiterate and the designing.”—*United Service Gazette.*

Published by the authors, and may be had at their residence; sold also by Strange, 21, Paternoster-row; Hanney, 63, Oxford-street; Mann, 39, Cornhill; London; A. Heywood, Oldham-street; Manchester; Phillips, South Castle-street; Liverpool; Campbell, 146, Argyle-street; Glasgow; Robinson, Greenfield-street; Edinburgh; and, in a sealed envelope, by all booksellers. Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Fitch-street, Soho-square, London; and patients can have this work privately forwarded them, by initial or otherwise, to any part of the United Kingdom, direct from the authors’ residence; or from any of the above agents, on remitting 2s. 6d. in postage stamps.

**DR. LAURENT ON THE SECRET INFIRMITIES OF YOUTH AND MATURITY.** With 25 coloured engravings. Just published, and may be had in French or English, in a sealed envelope, 2s. 6d.; or post-free, from the author, for forty-two stamps.

**SELF-PRESERVATION: A Medical Treatise, on the Physiology of Marriage, and on the Secret Infirmities and Disorders of Youth and Maturity,** usually acquired at an early period of life, which enervate the physical and mental powers, diminish and enfeeble the natural feelings, and exhaust the vital energies of Manhood; with Practical Observations on the Treatment of Nervous Debility, whether arising from these causes, close study, or the influence of tropical climates; local and constitutional weakness, syphilis, stricture, and all diseases and derangements resulting from indiscretion; with 25 coloured engravings, illustrating the Anatomy, Physiology, and Diseases of the Reproductive Organs, explaining their various structures, uses, and functions, and the injuries that are produced in them by solitary habits, excesses, and infection.

By SAMUEL LAURENT, M.D., No. 9, BEDFORD-STREET, BEDFORD-SQUARE. Doctor of Medicine, M.D. Member of the University of Edinburgh, Licentiate of Apothecaries’ Hall, London, Honorary Member of the London Hospital Medical Society, &c. The author of this singular and talented work is a legally qualified medical man, who has evidently had considerable experience in the treatment of the various disorders, arising from the follies and frailties of early indiscretion. The engravings are an invaluable addition, by demonstrating the consequences of excesses, which must act as a salutary warning to youth and maturity, and by its personal, many questions may be satisfactorily replied to, that admit of no appeal, even to the most confidential friend.”—*Era.*

“Unquestionably this is a most extraordinary and skilful work, and ought to be extensively circulated; for it is quite evident that the peculiar diseases, which are so common to the young, and which are so generally contracted from the conduct of those establishments, and which cannot be too strongly reprobated and condemned. The engravings that accompany the work are clear and explanatory; and being written by a duly-qualified medical practitioner, will, doubtless, be the means of saving many a youth, as well as those of mature age, from the various evil consequences resulting from early indiscretions.”—*Magpie.*

Sold by Kent and Richards, 52, Paternoster-row; Hanney, 63, Oxford-street; Starke, Titchborne-street; Haymarket; Mann, 115, Fitch-street; London; 146, Leadenhall-street; or free by post, for 42 stamps, from the author’s residence, who may be consulted personally (by letter) on these disorders daily, from 10 till 2, and from 5 till 8.

Illustrated by 25 Anatomical Coloured Engravings on Steel, On Physical Disqualifications Generative Incapacity, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 2s. 6d. postage stamps.

**THE SILENT FRIEND: a medical work, on the infirmities and decay of the generative system, from excessive indulgence, infection, and the immoderate use of mercury, with marks of marriage, and the means of obviating certain disqualifications, illustrated by 25 coloured engravings.** By R. L. PERRY & CO., 15, BERNERS-STREET, OXFORD-STREET, LONDON. Published by the authors; sold by Strange, 21, Paternoster-row; Hanney, 63, and Sanger, 150, Oxford-street; Starke, 23, Titchborne-street, Haymarket; and Gordon 146, Leadenhall-street.

**PART THE FIRST** treats of the anatomy and physiology of the reproductive organs, and is illustrated by six coloured engravings. **PART THE SECOND** treats of the consequences resulting from excessive indulgence, and their lamentable effects on the system, producing mental and bodily weakness, nervous excitement, and generative incapacity; it is illustrated by three explanatory engravings. **PART THE THIRD** treats of the diseases resulting from infection, either in the primary or secondary form, and contains explicit directions for their treatment. The consequences of neglect, and of the abuse of mercury are also clearly pointed out. This section is illustrated by 17 coloured engravings. **PART THE FOURTH** treats of Perry’s Preventive Lotion, by the use of which the dangers of infection are obviated. Its action is simple but sure; it combines with the virus chemically, and destroys its power on the system. **PART THE FIFTH** is devoted to the consideration of marriage and its duties. The causes of unproductive unions are also considered, and the whole subject critically and philosophically inquired into.

**THE CORDIAL BALM OF SYRIACUM** is exclusively employed in treating nervous and sexual debility, impotence, &c., 11s. and 3s. per bottle. **THE CONCENTRATED DETENSIVE ESSENCE**, an anti-syphilitic remedy, for purifying the blood in cases of infection, secondary symptoms, eruptions, and the abuse of mercury, 11s. and 3s. per bottle. **PERRY’S PURIFYING SPECIFIC PILLS**, 2s. 6d., 4s. 6d., and 11s. per box—a certain remedy in gonorrhoea, gleet, stricture, and chronic inflammation of the bladder. **PERRY’S PREVENTIVE LOTION**, an application to obviate the danger of infection, 2s. 6d. per bottle. **Consultation** may be by letter, &c. 45 packets, with advice, to be had at the establishment only, by which the fee, &c., is saved.—Attendance daily at 15, Berners-street, from 11 to 2, and 5 to 8; on Sundays, from 11 to 1.

Sold by Sutton and Co., 10, Bow Church-yard; W. Edwards, 67, St. Paul’s Church-yard; Bantley and Sons, Farringdon-street; Butler, 4, Gresham; R. Johnston, 63, Cornhill; L. Hill, New Cross; W. B. Jones, chemist, Kingston; J. W. Tanner, Egham; S. Smith, Windsor; J. B. Shillcock, Bromley; T. Nichol, London-street, Greenwich; T. Parker, Woolwich; Ede and Co., Dorking; and John Thursty, High-street, Rotherham, of whom may be had the *Silent Friend*.

## ROYAL GEOLOGICAL SOCIETY OF CORNWALL.

The thirty-fourth annual meeting of this society was held, in the Museum North Parade, Penzance, on Friday, the 1st inst., at which meeting the attendance of members and others was very numerous.

Sir CHARLES LEMON, Bart., president of the society, opened the business of the meeting by reading the address. He noticed the loss, since the last meeting, of three of their members—Mr. Paynter, Mr. Boskenn, and Mr. G. D. John; and said, the additions to their numbers were only in prospect. He said: “We have, at various times, made efforts to obtain for the society the direct co-operation of the miners—hitherto unsuccessfully; for even the premiums which we have offered, with a view to induce them to communicate with us, have been without result. I have been told, that this backwardness proceeds from the reluctance of the miners to put pen to paper. They are, as we all know, most acute observers, and ever-ready to impart the result of their observations; but, not being in the habit of writing for publication, they are unwilling to write; and, therefore, if we desire to possess their thoughts, we must employ some other hands than their own to record them. I have thought it worth while to make the experiment of employing the secretary of the Polytechnic in this service; and he has very kindly lent me his assistance. The result will be laid before you in his own words; and I have only to notice the very trifling cost incurred—his actual expenses having been only 12s. 6d. Every body here present, no doubt, is aware of the progress which has been made by Mr. Hunt, and before him, by Mr. W. R. Fox, in imitating the processes of Nature, by which rocks are consolidated, lamination formed, and certain veins distributed through the earth. The agent with which they worked, was a feeble and long-continued current of electricity, such as we have every reason to believe, is always present in all parts of the earth’s substance. Mr. Couch has lately employed the same agent, to imitate experimentally another of the secret processes of nature, by which she substitutes one material for another, in a mould which is still preserved. Thus is produced fossilisation and pseudo-morphism. Undoubtedly, it would have been more agreeable to the society, that Mr. Couch should himself have given some account of his experiments, but he was unwilling to make a formal announcement. He took a recent shell, which had been partially decomposed by exposure on the beach, and placed it under an exhausted receiver, in a solution of silicate of potash; and, by means, of a single pair of plates, under a low excitement, he passed a current of galvanism through the shell, still being in the fluid, the whole being enclosed in clay. At the end of five months, he found that the shell had undergone great changes; that the silica had been deposited in the cavities in a crystalline form; and that in some circumscribed patches, the lime had entirely disappeared, and silicious deposit had been substituted. In other places, where the action was more intense, the shell sometimes became coated with silica; and again, in others, the calcareous matter crumbled into powder, leaving small cavities. In a few cases, the whole shell disappeared by disintegration. Mr. Couch has repeated his experiments, but with varying results; so that the conditions necessary to secure complete success, have not yet been fully ascertained.—The trustees of the British Museum have lately given orders that casts should be made of some of the fossils in their collections. The plan has proceeded only a very little way at present; and I believe that not more than four or five casts have yet been made, two of which I beg to present to the society—that of the *Holopechius nodulosus*, it appeared to me to be of great importance that we should possess. It is taken from the most perfect specimen yet discovered of that fish, which is so characteristic of the Devonian formation. Many fragments of its scales have been found in Cornwall, and they have been of the greatest use in determining the age and character of our rocks. Thus much on the scientific value of this fossil; but I look forward to its affording some amusement also to those who, without reference to the strata in which they are found, take an interest in the records of the various forms of life which have inhabited this earth at different periods of its existence. We have, in our library, an easy and a very simple description of this and of several other kinds of fish, found in the Devonian rocks, whose history began, and sometimes ended, in that very remote period of the earth’s age. I allude to Millar’s ‘*Old Red Sandstone*,’ a book adapted to a young class of readers.—That we are making progress in science, I think no man can doubt; and, though we are beholden to external aid for much which has been learnt of our geology, still it would be unjust to the constituent members of our own body, to deny our internal resources are also great; and that the zealous and industrious application of the resources has done much to spread abroad the credit and character of our society, amongst our contemporaries and fellow-labourers, in England and on the continent. To these men—the working bees of our hive—we owe the gratitude which is justly due to those who reflect honour on their native land.”

The President then called upon Dr. WILLAN, one of the secretaries, who read THE REPORT OF THE COUNCIL. At our last annual meeting, we completed our sixth volume of *Transactions*; and with the present year we commence a new one, which the council hope will equal, if not exceed, its predecessors in value. The council have great pleasure in observing, that the investigation of the fossil geology of our country still advances. This is a subject to which the council would once more especially direct the attention of the society; it will be observed, that a large portion of our last volume is dedicated to this branch of our pursuit; and, when we remember that the discovery of fossils in Cornish rocks is but of recent date, the council may congratulate the society in the advance already made, and hope that its future progress will be equally rapid. Mr. Pattison, of Lancaster, has followed up his observations on the carbonaceous deposits of the county, read at your last meeting, by further researches into the deposits of our northern shores—extending in a westerly direction from those previously described. This line of research is particularly valuable, since it is in the region of the junction between the carboniferous and Devonian rocks. The paper is accompanied by illustrative fossils, which Mr. Pattison has liberally presented to the society.

The sixth volume of the Society’s *Transactions* was laid on the table, and a statement of finances was read, showing balance in hand from last account, 151l. 16s. 3d., and the available balance now in favour was 217l. 3s. 4d.

JOSEPH CARR, Esq., then proposed, that the sum of 5l. be placed at the disposal of the council, for the purpose of remunerating Mr. Rendell, or some other individual, for collecting information from the various mines, to be reported at the next meeting.—J. A. BOASE, Esq., seconded the motion, which was adopted *unanimously*.

SAMUEL PIDWELL, Esq., one of the secretaries, then read the

### DONATIONS TO THE MUSEUM.

Uranite—purchased by the society. Crystallized Iron, from the North United Mines, Zennor—by Samuel Higge, Esq. Suite of Specimens, from the Serpentine district—by Mr. Verran. Suite of Fossils, from the south-eastern parts of England—by Mr. Rogers. Specimens of Fossil Wood, &c., with the adjacent rocks, from the Maquaire Plains, Hobart Town—by W. D. Land, Esq. Organic Remains, from the south-east part of Cornwall—by R. Q. Couch, Esq. Organic Remains, from Lanivet—by W. C. Peach, Esq. Regulus of Cobalt—by Richard Pearce, Esq. Ruby, Silver, Galena, &c.—by P. Johnson, Esq. Specimens of Rubies, Sapphires, Garnets, Amethysts, and other precious stones, from Poona and Ceylon—by J. Bowman, Esq. Organic Remains, from Tintagel and the neighbourhood—by S. Pattison, Esq. Fossils, from Lanivet—by W. Peach, Esq. Specimens, from the Falls of Nimble—by Robert Watson, Esq. A Specimen, from a well-defined bed of copper, from Ballymurgah; red oxide of copper, as found in the soil near copper lodes, from Conquimbo; massive black oxide of copper, from Conquimbo; fragment of a pebble of copper, from Lake Superior; and red oxide of copper, from South Wheel Bassett—by J. Garby, Esq. Red Oxide of Iron—by William Thomas Carr, Esq. Specimens, illustrating Mr. Rendell’s Report on certain appearances in Gwerner Consols and Withered Seton. Specimens of the Oxide of Iron—by J. Batten, Esq. Case of *Holopechius nodulosus*—by the President. Specimens, from quarries in the centre of Lincolnshire—by the Rev. C. V. Le Grice. Silver-Lead Ore and Carbonate of Lead, from Trehan Mine—by Mr. George Jennings. J. J. A. BOASE, Esq., then read the

### DONATIONS TO THE LIBRARY IN 1846 AND 1847.

*Transactions of the American Philosophical Society at Philadelphia*, vol. ix., part iii.; Proceedings of ditto, Nos. 34 and 35—by the Society. Address, delivered at the anniversary meeting of the Geological Society of London, in 1847, by L. Harker, Esq.—from the Author. Remarks on Tides and the Prevailing Currents of the Ocean and Atmosphere, by W. C. Redfield, Esq.—from the Author. Report of the British Association, for 1846—by the Association. *Transactions of the Geological Society of London*, vol. viii., part iii.; and the Quarterly Journal of the same Society, for Nov., 1846, and February, May, and August, 1847—by the Society. Bulletin de la Société Géologique de France—Nos. for 1846 and 1847; four ditto for 1844 and 1845; five ditto for 1845 and 1846; and one ditto for 1846 and 1847—by the Society. Fourteenth Annual Report of the Royal Cornwall Polytechnic Society—by the Society. List of Members of, and Donations to, the Geological Society of France—by the Society.

The following papers were read:—“On Some Post-tertiary Strata in Cornwall,” by Mr. Pattison; “On the Fossil Geology of Cornwall” (given in another column), by Mr. Peach; “Remarks on the Geology of Cornwall,” by Mr. Couch; “On a Strump of a Tree found in cutting a Drain at Heligan,” by Sir C. Lemon, Bart.; “On the Geology of the Tintagel District,” by Mr. Pattison; “On the deposit of Metalliferous Substances,” by Mr. Percival N. Johnson; “On the Detrital Gold Deposits of Brazil,” by Mr. W. G. Henwood; “On Stream Works,” by Mr. R. Newton, jun.; “On certain appearances in Gwerner Consols and Wheel Seton,” by Mr. M. W. Rendell; “On the rapid diminution of the Sand Banks in Monks Bay,” by Mr. R. Edmonds, jun.; “On Sand Hills in the vicinity of Carhayes, near Gorran,” by Mr. Peach.

The President said, that he held in his hand a communication from Mr. Robert Hunt, the keeper of mining records in the office of the Geological Society, relative to the article of lead. The tables were made up, which were obtained from parties connected with the mines, and from the private papers of the late Mr. Hunt, but as there was no regular publication of the lead sales, the tables were sold in large and small quantities, sometimes publicly, but more frequently by private contract, there was difficulty in obtaining accurate information of the entire produce of the United Kingdom. But there was one circumstance to which he would draw attention, and a fact—in deducting the quantity of lead

ore imported from that exported by us, the balance was in favour of the latter in the proportion of one-seventh upon the whole produce.

Mr. Fox stated, that Mr. Deas, the engineer engaged on the Harlem Lake, had said that he had discovered gold in a granular form in galena, in Wales; and he showed him (Mr. Fox) a bar of gold six inches long and an inch over, obtained from 17 tons of the ore; and also in lead mines at Newquay, there was gold; and grains of gold had been found in lead ore, iron pyrites, &c. If they could find a few grains of gold in these ores, it would pay three over for extracting.—The President observed, that it was only a few years since they began to extract silver from their ores.

Sir C. Lemon having vacated the chair, Colonel Seccombe proposed, and the Rev. Canon Rogers seconded, that Sir Charles be re-elected president of the society for the ensuing year, which was carried by acclamation.

The following officers, &c., were then elected:—

Vice-Presidents—R. Taylor, Esq., R. Blakemore, Esq., W. Williams, Esq., J. Vivian, Esq., Council—T. S. Bolitho, Esq., J. N. B. Millett, Esq., R. Pearce, Esq., F. Paynter, Esq., S. R. Pattison, Esq., S. B. Jones, Esq., A. Fox, Esq., R. Davey, Esq., F. Farnham, Esq., R. Millett, Esq., J. S. Enys, Esq., E. Bolitho, Esq. Treasurer—J. S. Enys, Esq.—Secretary—J. R. Willan, Esq.; J. Fiddell, Esq. Curator—R. Q. Couch, Esq.—Librarian—J. J. A. Boase, Esq. Corresponding Members—Rev. E. Budge, of Bratton, Clonally; J. Norman, Esq., of London; R. Hunt, Esq., of London. Members of the Second Class—Mr. R. Newton, jun., of St. Agnes; Mr. W. W. Rendell, of Falmouth; Mr. Chorley, of Truro.

Votes of thanks were passed to the contributors of papers, &c., and the business terminated.—The usual dinner afterwards followed, which passed off with great éclat.—Condensed from the *Penzance Journal*.

## ON THE VENTILATION OF COAL MINES.

An adjourned and numerously-attended meeting of the Liverpool Polytechnic Society, was held, at the Royal Institution, on Monday week.—HARRY DAWSON, Esq., in the chair,—at which Mr. JOHN SWEETLOVE read the following valuable paper on the ventilation of coal mines:—

Notwithstanding all that science and ingenuity have done in improving the methods of working and ventilating coal mines, the numerous and frightful accidents which are constantly occurring, show that those hitherto adopted are very far from answering the end proposed. Although Mr. Buddle’s mode of working the coal, and the use of Davy’s safety lamp, have greatly diminished the loss of life in mining, still it takes place to a lamentable extent. It is probable that, in the mining of coals, in England alone, 300 human beings have fallen a sacrifice within the last three years. In the case of explosion, 167 individuals perished. That which happened at the Haswell Colliery, Durham, in November, 1844, killed 95 men and boys, and the explosion at the Ardley Main Colliery, in March last, killed 72. Every humane man must anxiously inquire whether science can devise no means of preventing the recurrence of calamities such as these. I believe it can. The first step towards the attainment of any remedy, is a knowledge of the evil to be removed—to be able to form a judgment of the applicability and probable efficacy of any proposed mode of ventilating coal mines, it is necessary to be acquainted, not only with the pneumatic conditions to which they are liable, but also with their internal arrangements and economy.

You are, doubtless, all acquainted, gentlemen, with the geological position of the coal measures generally, as well as with the distribution and disposition of the principal coals in this country. You are also aware that coal is a vegetable matter, which, from having undergone a species of fermentation for ages, under enormous pressure, has become a laminated pillar, and contains also large quantities of carburetted-hydrogen gas, present in the pores of the coal, probably in a liquid state, and ready, from its high elastic force, to escape on every diminution of the pressure under which it has been generated. It is this gas which, escaping into the roof and galleries of the mine, constitutes, when mixed with air, the fire-damp—dangerous in two ways—first, by its explosive violence; and secondly, by the noxious products of the explosion. From this it will appear that the duty of perfect ventilation is two-fold—viz., first, the removal of this dangerous gas before its admixture with the atmospheric air in the mine; and, secondly, to keep up a constant supply of pure air from the surface, to replace the air which is consumed by the miners. These objects can only be effected separately—we may, therefore, ascribe the failure of the present modes of ventilation, to their attempting to effect them conjointly. In order that you should understand the cause of this failure more fully, it is necessary for me to describe the modes of working and ventilating the mines at present in use.

There are two essentially different methods of working coal adopted in this country—the first is the “pillar” method, of which there are three varieties—one or other of these methods is the “long” method. The second is the “short” method. The third is the “shropshire” method; this is adopted in Yorkshire, Shropshire, and South Wales. Of the “pillar” method, that is called “panel work,” invented by Mr. Buddle, is most esteemed, and generally adopted. The principle of this mode is very simple: I will briefly describe this system as best suited to the objects of the present paper.

Mr. Buddle’s system is called “panel work” because, instead of carrying on the area of coal to be mined, technically called the “coal-field winning,” in one extended area of the mine, it is divided into a number of distinct quadrangular compartments, or “panels,” each containing an area of from 6 to 12 acres—these are separated by walls of coal from 40 to 50 yards in thickness. Through these “panel walls,” roads and air courses are driven, for the purpose of working the coal contained within them. All the “panels” are, therefore, connected together, and with the shaft, as to roads and ventilation. Each compartment or “panel” has a particular name, so that any circumstance relative to the details of the colliery—casualties as to falls and crushes, ventilation, and the safety of the miners, may be referred to a specific place. Mr. Buddle makes his rooms narrow, and the pillars large, the latter being 12 yards broad, and 24 feet long; the pillars are 4 yards wide, the “walls” or “thirlings” cut through the pillars are 3 ft. wide for ventilation. When the pillars of a panel are to be worked, one set of pillars is first attacked; when the miners have cut away the further pillars, props of wood are erected within a few feet of each other, to prevent the seam forming the ceiling, from falling on the men. In this way large areas are cleared of pillars, the superfluous strata having no other support than the wooden props—this is called *working the goaf*. Before working the goaf, it is necessary to allow the previous goaf to fall; for this purpose the men withdraw the props, which is a very dangerous operation. They next attack the pillars nearest the goaf, setting props as before—then drawing, and so on, till the whole panel is worked. As the panels are worked, the panel walls are worked progressively towards the shaft, so that, eventually, little coal is left behind. The advantages of the panel system are improved ventilation, and greater security whilst working, besides permitting a larger portion of the coal to be abstracted, the loss not exceeding 1-10th instead of one-third or one-half, as by the old modes. It is not uncommon, in the north of England, to all extensive mines, an area of coal, which is wholly cleared of coal, the goaf being broken fragments of the fallen rock—such a space is called the goaf. This brief description of the arrangement and working of a coal mine will enable you to appreciate the various methods of ventilation practised. (This part of the paper was illustrated by several large diagrams, by means of which Mr. Sweetlove explained at length the mode of working the coal on Mr. Buddle’s plan.)

Before the steam-engine was applied to mining purposes, the excavations were of such a limited extent, that accumulations of inflammable air were dissipated by firing it every morning, or as often as requisite. This was done by introducing a lighter candle, fixed to the end of a long pole, held by the fire, who lay flat on the floor of the mine, and the light might pass over him! Another mode was that of drawing a candle, attached to a long sliding wire, into the head-way, where the gas just was as a gas is heated to the mass-head; but, after the introduction of the steam-engine, mining operations became more extensive, and these rude methods of removing the fire-damp were found inadequate. More efficient modes were gradually devised—at present the aerial circulation is regulated, to all extensive mines, by a system of “beating-draws,” and “stopplings.” Mr. Buddle, of Walsend Colliery, has carried this mode to its highest perfection; by his plan, the aerial current is carried through every corner of the mine. In this system, and every modification of it, ascensional force is obtained by means of a furnace placed near the bottom of the upcast shaft. The great defect of the plan is, that it requires the inflammable gas to be mixed with the circulating air of the mine, to be delivered in the upcast shaft, and thus renders the formation of the explosive compound of gas and air a matter of certainty, whenever the least irregularity occurs in the current. (This part was also illustrated by diagrams, on which the circulating air-currents were traced through the ramifications of the mine.)

We have seen that the carburetted hydrogen is contained in the pores of the coal, and escapes constantly into the mine, from the many fissures, crevices, and dislocations, or even from the newly-cut surface of coal. It issues, for the most part, from the crevices or “cutters” in powerful jets, called blowers. It is generally very abundant near dislocations of the strata, so much so, indeed, as to rush out, in copious streams, for years together. Light carburetted hydrogen contains 1 vol. of carbon to 2 vols. of hydrogen, condensed into 1 vol. When pure, it requires twice its volume of oxygen to consume it completely, and about 10 times its bulk of common atmospheric air for the same purpose. 1 vol. of air containing one-fifth oxygen; 1 volume of gas, mixed with 10 volumes of air, will, therefore, form the most explosive compound. But any proportion from 1 gas and 6 air, to 1 gas and 16 air, is explosive, so that gas will render 14 times its own bulk of air explosive. These properties obviously render its free presence in the mine very dangerous; and, unless the quantity dissipated were small, or the current of air circulating through the mine large and rapid, an explosive mixture is always liable to be formed; but, in consequence of the existence of power in every mine, even these conditions of the circulating current are not sufficient to ensure safety from explosions. In some of the mines in the north of England, it is not unusual, as already stated, to find a goaf of many acres in extent. This area will form one large gas holder, whose contents may pour into the galleries of the mine with every fall of the barometer. Suppose a goaf of 5 acres in area, and 6 ft. high, filled with the gas under a barometrical pressure of 30 in., and the mercury were to fall suddenly to 29 in., nearly 50,000 cubic feet of gas would flow into the mine, a quantity capable of rendering three-fourths of 1,000,000 ft. of air explosive; but, independent of all changes of atmospheric pressure, carburetted hydrogen has a considerable diffusive power, and, from this cause, will be continually flowing slowly into the surrounding galleries, and thus render the neighbourhood of the goaf dangerous. Besides, then, the danger of allowing the mixed currents to circulate through the mine, in Mr. Buddle’s plan, it has the further danger arising from accumulations of gas in the goaf and other similar localities.

Mr. Ryan, perceiving these dangers, conceived a plan for obviating them, in 1818, for which he received the gold medal of 100 guineas, of the Society of Arts; his plan consisted in digging small canals along the roofs of the boards and head-ways, and leading into the upcast shaft—these canals he called gas head-ways. This plan was founded on the principle that the light carburetted hydrogen would rise to the roofs of the galleries, and flow through the gas head-ways without mixing with the atmospheric air; to a certain extent this would be the case, and his plan, when he was able to have it tried, was productive of much good effect; in trying to introduce it, however, he encountered the strongest opposition from the very individuals whom his invention was intended to obviolate to benefit. He says, “the year 1808 was marked by several disastrous explosions in various coal mines throughout England and Wales; in the course of that year 26 men perished, in two explosions at Mostyn Colliery, 16 by an explosion at St. Helen’s, Lancashire, and 11 by another in a colliery at Whitehaven—these events induced me to think I could bring my system into action. I visited all these collieries in vain. I also visited Durham and Northumberland, but found here the same prejudices and opposition that I met with in other quarters, and returned without being able to get a trial in any pit whatever.” Subsequently, through the kind intervention of Sir John Sinclair, and a few other scientific men of rank, he got fair trials, which, he states, were completely successful; the plan seems, however, to have made much way, for at present it is almost, if not quite, forgotten. The defect in this plan appears to me to be a deficiency of ascensional force in the gas to be removed, and an exposure of it to the air in the mine; and, therefore, the mischief arising from the diffusion of the gas into the circulating current of air. The main principle, however, was the right one—viz., that of removing the hydro-carbon gas separately. The plan which occurred to my mind, so far back as the latter end of 1844 (suggested, indeed, when reading an account of the explosion of the Haswell Colliery), as being likely to prove an effectual remedy for this frequently recurring calamity,



is, to carry a large pipe down the upcast shaft, where there is one, and down the upcast compartment of the single shaft, when such is the arrangement, to the bottom, and connecting smaller pipes, and running to the surface, to the "goose" or "pot-holes" and other places, where the dangerous gas accumulates. The material of these pipes might be thin iron or zinc, or even wood, properly secured against leakage. The size of these should be regulated by the extent of the mine, and the quantity of gas to be removed. At the top of the main, or upcast pipe, I would place some means for extracting it, such as Mr. Taylor's hydraulic air-pump, a common air-pump, or Hill's ventilating bellows, which might be put in connection with the engine, and thus kept working constantly. In some cases, an ordinary ventilating fan might serve, to be put in motion by the wind, which would keep up an exhausting process, day and night, and thus preserve the mine in a state of complete purity. The course of the mine-pipes would be determined by the peculiarities of the mine itself; where they passed "blowers" or "pot-holes," they might be furnished with lateral induction pipes, having funnel openings to receive the larger jets; valves, opening inward, would prevent all back currents, caused by any obstruction in the main exit pipes. Even the channels or ragings of Mr. Ryan's system might be adapted to the plan by covering the faces with seals, and made air-tight.

The only practical difficulty attending the application of this plan, that occurs to me, is that arising when "falls" or "creeps" might derange, or partially destroy, the mine-pipes; this, I fear, not to be obviated. In such cases, the pipes could, at least, be re-adjusted; but partial failures forms no valid objection to the employment of any scheme, where perfection cannot be obtained. When considerable good is effected on the whole by a plan, a claim is established, at least, until a better can be found to supersede it. Of the principle of the plan, I have no doubt, I feel much confidence, and shall be happy to have my opinion on its merits, and its practicability, put to the test. I have no doubt, many of the members, who are more conversant with the process of mining, than myself, will, no doubt, be enabled to suggest improvements in them; that they should do so, formed, under my principle motive for venturing to lay the plan before them. The Liverpool Polytechnic Society has gained a high reputation for the practical sagacity and scientific accuracy that characterise its discussions, as well as the important applications of some of the inventions originating in it. Any scheme, therefore, that is put forth with the ordinary ventilation fan, and approved by the members of the society, will be a recommendation in the world; and, for that reason, be all the more likely to fulfil its object of promoting the well-being of a highly useful and numerous class of our fellow-creatures.

With the reception of Mr. Ryan's plan, and, indeed, of the still greater invention of finding an enthusiastic acceptance of any scheme of mine. Almost all the hopes I have of giving currency to this, are founded on the endorsement with which this society may honour it. To your judgment, I therefore, submit it.

Since writing the preceding—indeed, so recently as last Friday—I have discovered that Dr. Faraday proposed a very similar plan, for the same purpose, upwards of two years ago. His plan was described in a lecture on the "Ventilation of Coal Mines," delivered at the Royal Institution. The lecture was founded on a report made by himself, and Mr. Lyell, to Government, on the causes of the explosion that had occurred the preceding year, at the Haswell Colliery. From the very cursory glance of a few minutes I was able to give to the lecture on Friday last, I find the Doctor proposes pipes to drain the gas through the upcast shaft. He says, "Our proposition is to lay down iron pipes that will reach to the upcast, or return way, by a flexible extremity." He then goes on to express his strong conviction of the efficacy of the plan, and concludes by expressing an earnest hope of seeing it put into operation. I am not aware that his hope has yet been realised, but I fear it has not; so great is the inertia of habit, so strong the desire of continuing to walk in the beaten track of routine, that, to say nothing of the unwillingness of most men to incur expense, or inconvenience, from motives of mere philanthropy, it will require a long time, and no little "pressure from without," to get his plan into general use.

Although Dr. Faraday's plan does not seem identical with that just laid before you, had I known how great was the resemblance, I should not have presumed to trouble you with an account of it. As already stated, the idea of the plan first suggested itself to me in the latter end of 1844, when reading an account of the Haswell explosion. I named the plan at the time to several members of the Natural History Society, some of whom may be here present, and remember the circumstance; but being much engaged, the plan was laid aside until last Friday, when I read it to the members of the society, and in March last. The subject of mining being somewhat remote from any usual pursuits, it may be supposed that I was not necessarily acquainted with all that had been previously done in it. It was not until very lately that I became aware even of Mr. Ryan's plan.

I make these remarks, not for the purpose of setting up a claim to the priority of invention, should it ever be considered one, but to obviate observations that might be made as to its being brought forward here. The satisfaction felt in having my opinion fortified by that of Mr. Lyell, and the knowledge that the plan was not a new one, but one that might be experienced in families myself, rendered the publication of that opinion. In publication I cheerfully yield the precedence to Dr. Faraday, and hope, with him, the plan may be found to ameliorate the hard lot of a numerous and highly-deserving class of our countrymen. The paper was greeted with loud applause.

Mr. SPENCER remarked that one objection to Dr. Faraday's plan was, of course, the expense. He meant to pump with a steam-engine in order to create a vacuum, but the adoption of Mr. Nasmyth's mode of creating a vacuum, about the same time propounded, would obviate this.

Dr. HUME had great pleasure in hearing Mr. Sweetlove's views; Mr. Sweetlove had mentioned them to him two years ago. At that time he understood that his plan embraced more than he had stated now; he understood that those ramifying pipes were to be punctured at the bottom with holes, so as to take off not only the gas generated in the goafs and passages, but also the gas generated in the goafs and passages. Supposing, he added, a very large quantity of this foul air was brought up to the top of the mine, as it would of course mix just at the top of the upcast with the atmospheric air, would it not be very dangerous to persons in the immediate vicinity?

The CHAIRMAN said, if no light was applied, it would escape very rapidly. Dr. HUME remarked that, as society became civilised, more and more respect was paid to human life. Whether the honour of the plan was due to Mr. Faraday or to Mr. Sweetlove, they were much indebted to the latter gentleman for the lucid manner in which he had brought the subject before them.

Mr. SWEETLOVE said, he had abandoned the idea of puncturing the pipes, as the plan would have the defect of Mr. Ryan's—allowing the gas to diffuse in the air.

A Member asked how it would do, by means of an electric spark, or extending into goafs and passages a heated platinum wire, to destroy the gas as it generated?—To this it was replied, that carburetted hydrogen could not be exploded by a red heat—it required a flame to do it. An electric spark would, however, explode it.

Another Member suggested that, possibly, the concentration of gas in the pipes, and its communication with the goafs, would, in case of an accidental explosion, add to the danger. Mr. SWEETLOVE replied that the gas could only ignite at the orifice, and the flames would not extend to any place but that which was in immediate contact with the atmospheric air. A Gentleman present remarked, that the quantity of gas evolved in one he had seen was so great, as to keep a 4-inch pipe lighted night and day.

Mr. LOMB remarked on the power of the fan used in cotton mills, and suggested that one might possibly serve for exhausting the pipe.

Mr. SPENCER said, if the owners of mines had the disposition to adopt it, he had no doubt that Mr. Sweetlove's plan would be found efficient; but coalowners, he believed, would never do so unless compelled by the Legislature, or tremendous damages awarded in compensation, in case of accident. There were already two or three efficacious plans, but this he believed to be the most efficacious.

Mr. GREATHAM said, he had been manager of a colliery for seven years; and the expense caused by accidents was so great, that he was sure, on the score of economy, it would be advantageous for coalowners to adopt some such plan as Mr. Sweetlove's. Mr. JOSEPH BOWEN thought the alleged apathy of coalowners might arise from ignorance, rather than indifference.

Mr. SPENCER said, Dr. Faraday's plan had already been laid before Government. He would ask, whether any coalowner had adopted the plan or not? or in what pit was Mr. Ryan's plan in operation?—Mr. SWEETLOVE said, he was not aware of one.

Mr. LOMB said, for the paddle-wheel, simple as was its construction, no less than 500 patents had been taken out. There was a just and natural caution in society—coalowners could not be expected continually to experiment.

Mr. SPENCER answered, that he would never have been rid of smoke if the plans of two or three quakers had not at first been tried.

Mr. JOSEPH BOWEN said, he would like to see the plan, and he did not think it practicable to consume smoke, nor would it be so for years to come.

Mr. LOMB asked, the arrangement of Mr. Sweetlove's paper being so beautiful, if it could not be got into some newspaper; backed by the society, it might thus become of practical use. The CHAIRMAN said, he had no doubt, if an abstract were sent to the Editor of the *Mining Journal*, he would be quite delighted with it. Had Mr. Sweetlove any objection to its thus going forth?—Mr. SWEETLOVE said—None, whatever; his object was not profit, but simply to diminish the loss of human life. (Applause.)

After a vote of thanks to Mr. Sweetlove, the society then adjourned.

**MANUFACTURE OF ALKALI AND CHLORINE.**—Mr. C. T. Dunlop, of Glasgow, has recently obtained a patent for some "improvements in the manufacture of alkali and chlorine, and in the application of the product resulting therefrom;" the first part of which consists in an improved method of producing chlorine, fit for manufacturing purposes, by the mutual decomposition of the following substances:—Muriate of soda, or any other muriate—nitrate of soda, or any other nitrate—muriatic acid—nitric acid. In some instances it is also requisite to use sulphuric acid; and the patentee generally prefers to employ it, in order to obtain, as a residual product, sulphate of soda, suitable for the manufacture of soda, &c. All the above materials may be employed together, or only two of them; as, for instance, a nitrate with a muriate (in which case sulphuric acid must also be used), or a muriate with nitric acid, or a nitrate with muriatic acid, or muriatic acid with nitric acid: in the latter cases, sulphuric acid is employed, according to the results desired to be obtained. The patentee says—he does not confine himself to any proportions, but the process he usually adopts is, to bring together common salt, nitrate of soda or nitric acid, and sulphuric acid, in suitable proportions; heat being then applied, chlorine, an oxide of azote, and muriatic acid, are evolved; these gases are caused to pass through a condenser, charged with sulphuric acid, of sufficient strength to absorb the oxide of azote; and then the chlorine and muriatic acid are separated by means of water. The second part of the invention relates to the application of the product resulting from the above process, and consists in the production of nitric acid from the sulphuric acid, charged with oxide of azote, which is true nitrous sulphuric acid. This is effected by the aid of atmospheric air, steam, and water; and the process adopted by the patentee is, to introduce the nitrous sulphuric acid into a suitable vessel, and, by the addition of water and heat, to effect the disengagement of the oxide of azote, which, being caused to traverse a condenser, together with a sufficient quantity of air and steam, or water, is by this means transformed into nitric acid: this acid may be again used in the manufacture of chlorine, and again recovered, and so on. Sometimes, in place of treating the nitrous sulphuric acid, as just described, the patentee causes the oxide of azote to be evolved, and to pass into a chamber, into which a current of sulphuretted hydrogen is streaming; by which means sulphate of ammonia is obtained and sulphur deposited. The patentee claims the manufacture of chlorine from the materials above mentioned, in the manner described; the process employed for separating the gaseous products, so as to obtain the chlorine in a sufficiently pure state for manufacturing purposes; and the two processes described for utilizing the products resulting from the manufacture of chlorine.

**VARADATE OF LEAD AND COPPER.**—M. Duffréy presented to the Academy, in the name of M. Doneyko, professor of chemistry and mineralogy, in the College of San Yago, Chili, an account of this new mineral, which is composed of—Oxide of lead, 64.9; oxide of copper, 14.6; vanadic acid, 13.6; arsenic acid, 4.6; phosphoric acid, 0.6; chloride of lead, 0.3—88.5.

## PENNANT LEAD AND COPPER MINING COMPANY.

4, Salisbury-street, Strand, London, October 8, 1847.

I have just returned from the mines, which I fully inspected, in company with Mr. Scott, one of the directors. Two gentlemen of the Society of Friends, who are large shareholders, were at Dinas Mowddwy at the same time, and made a survey of the works, accompanied only by Mr. Hugh Jones, the captain; they expressed themselves highly satisfied with the position and prospects of the undertaking. Mr. Richardson, a civil engineer, practically acquainted with the value and properties of all the colouring earths, who was recommended to the company by gentlemen (shareholders) of the Society of Friends, has made a report on the property, at the request of the directors—it is annexed. The drawings, alluded to in the report, can be seen at the office.

We first examined the eastern, or Llath Nant, side. Doubleday's adit looks very well; the hard iron pyrites has sunk down below the floor of the adit, and is replaced by a softer description, mixed with pryan and fine spar, brilliantly impregnated with very small prills of mundie. In the forebore there is a promising lode, of about 12 inches wide, composed of spar, flookan, and pyrites. We are following on the course of this lode—the men think well of it. Near the adit, they have met with a deposit of clay, quite similar to that near No. 17 lode, in the Purnhydd Valley. There is a large pile of iron pyrites on the bank. Mansell's adit, in the Purnhydd Valley, is progressing most satisfactorily; the matrix is the same as before, but rather softer since they passed through the branch. The miners seem convinced they are approaching something good, and are working with energy. Really this is a most workmanlike adit, and does great credit to the men: it is perfectly straight and level; it is 7 feet high, and 5 feet wide in the narrow part, and is driven nearly 85 fathoms. It is quite free from timbering for the roof, and a tramroad runs the whole length of it for the removal of the debris, and much improved. There is a dropper running through it into No. 17 lode, composed of prills of copper, barytes, mundie, and carbonate of lime. The water is much increased, which is a good sign; the shaft is 8 feet by 6 feet within the timbers, and is altogether a noble piece of work. A whim, and all necessary machinery for facilitating the removal of the debris and water, has been purchased, and will be erected forthwith.

The rain has been almost incessant for nearly six weeks, which has necessarily retarded greatly all surface operations. Arrangements, however, have been made for bringing the timber to market promptly.

The condition of the workmen has been much ameliorated by the decrease in the price of all articles of food—so that the good wages which they have been making throughout, now enables them to live better, and work contentedly. They now get 5½ lbs. of flour, instead of 3 lbs., and sometimes less, for 1s.; meat (mutton) has receded to 5d. and 5½d. per lb., and salmon, which is abundant, to 3d. per lb. The men, however, have still to complain, and justly, of the distance the work takes them to the place of abode—being four miles to the nearest, and six miles to the more distant parts. The erection of cottages on the locality, will, hereafter, be well worthy the consideration of the shareholders, as a means of securing both more expeditious and economic working; for the fact of the men walking 8 and 10 miles per diem, in all weathers, must more or less deprive the company of their proper energies, and the inconvenience and expense to which they are subjected, are taken into calculation when they enter into the monthly contracts for work: they are located chiefly in Dinas Mowddwy, in lodgings, for which they pay from 2s. 6d. to 3s. 6d. per week. The day labourers have 12s. per week; the miners are making 20s. and 21s., and the pitmen 25s., per week, which are considered high rates in more expensive localities for living.

The expense of driving Doubleday's adit is 3l. 10s. per fathom; Mansell's adit, 7l. per fathom; and Oliver's shaft, 14l. and 15l. per fathom—in addition to the men at the turn-tree, who are paid as labourers.

I am, your most obedient servant,

W. MANSELL, Hon. Purser.

### Mr. Richardson's Report to the Directors of the Pennant Mining Company.

At your request, I have made a survey of the Pennant set, and beg to inform you, that the various lodes delineated on the plans are very plainly discernible, particularly those on the south and north-eastern boundaries. The set being so extensive, and the lodes so numerous, I have considered it the most prudent course to pursue, in giving a report, to confine my description to such portions as may be considered of immediate interest to the company, and as being the locality of the present operations.

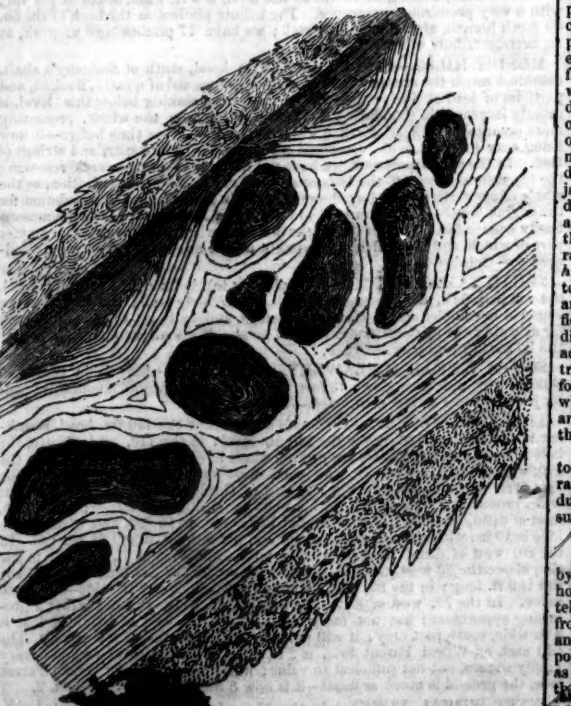
I have, therefore, carefully examined No. 14 lode, and find it to be 10 feet wide, somewhat loose and deranged, but possessing every appearance of being a strong and promising lode. It is composed of very fine gossan, spar, small spots of mundie, flookan, and traces of very fine copper ore. I consider, at a very slight depth below surface, this lode will assume a more regular form, and become more concentrated. I have traced it nearly over the mountain: it is plainly visible in the morass, about 300 fathoms from the brow, where it ceases out in the stagnant water, carrying a strong oxide of iron. Its position is nearly vertical, though, probably, it takes more in depth to the eastward.

No. 17 is a well defined lode, 3 feet wide, with regular walls, and one of a first-class character. It is, in itself, of sufficient importance to warrant a considerable expenditure to develop its properties. It may fairly be said to be a champion; and I have not the remotest doubt, but when cut in the level now driving, of proving productive in lead, of excellent quality; its underlay, at surface, is about 2 feet in the fathom; but, I think, it becomes more vertical in depth, otherwise it would, before this, have been cut in the shaft, which is 22 fathoms down. This not having been done, convinces me it forms a parallel with the shaft: it carries a considerable quantity of flookan, spar, gossan, and small prills of lead, with sugary spar and barytes. I should recommend a cross-cut to be made from the shaft, which, I think, will intersect it, after driving about 3 fathoms; and this may be done without hindrance to the sinking of the shaft; it will also serve its qualities at that depth, and be the means of deciding the arrangement of all future operations. The ground in the shaft is of a more favourable nature for sinking on, being in a clay slate, and still softer ground may be expected to be met in depth to the eastward.

**Main Adit.**—This level, which is to form the main trunk, or outlet, for all the underground workings of the mine, is a fine piece of work, and one which will repay amply the capital that has been expended on its formation, should the mine prove productive. The men are driving at 7l. per fathom; but, as the depth is now getting considerable, the air is somewhat bad. I should certainly recommend some air-pipes to be at once got in, whereby ventilation may be effected. The price of driving might thus be reduced to 5l. 10s. per fathom; or a shaft may be sunk, 3 fathoms deep, and holed through by boring, and a water-lift formed; but, as this would take time and some outlay, the most simple plan, probably, would be the most prudent course to adopt.

**Slate Beds.**—In the brook Nant-y-Gafn, that rises in the centre of the set and runs to the eastward, are two fine beds of beautiful blue slate—each of them several fathoms wide, running up to the surface. The indications are of a very satisfactory nature, inasmuch as the quality is excellent. This can be easily perceived by the edges in the stream, which are quite sharp—showing that it perfectly resists the influence of the atmosphere, and is thereby free from the presence of iron, otherwise it would be found in a decomposed state at surface. It is of the most durable kind of slate, though not adapted for every purpose to which that article is applied. In its lamina it will be found coarse—consequently, not fit for roofing slates, as it will not split fine; but, for making slabs, it is excellent, being hard, durable, strong, and of good colour: the heads are very regular, and, at a moderate depth, I fully expect large floorings will be easily raised. As an appendage to a mining set, I consider this of great value, as slate is useful for many purposes in mining, as in all other works. Should the company ever work these slate beds, or let them to other companies, there are ample means of forming fine quarries. Roads may be easily made, at a small cost, down the side of the mountain to the turnpike-road—from whence to the shipping port is distant about 10 miles. The great demand there is now for slate slabs, of every description, is a feature in the present instance that may admit of more mature consideration.

**The Umler District.**—The locality in which this valuable commodity is found, is on the northern side of the set; and the lode, or lodes—for there are several—commences in the brook at the foot of one of the waterfalls. They then take a regular bearing, with a considerable underlay, to the very top of the mountain. I have traced them as far as I could ascend the precipice, and taken many samples. They appear to improve in quality as they rise, but there is very little difference in their marketable value. The number of two kinds—fine and coarse—may be said to form three layers. The lower one, which is the most regular, is about 12 inches wide, and lies on the foot wall of the lode. The centre one is of very fine nature, and what I call Vandyke of Commerce. It lies in bowls, imbedded in a strata of coarse killas, unaltered with any other matter, in something of the following form:—



The upper part of the set is regular—in some places 12 inches wide, and the distinguishing feature is a hanging wall is mountain limestone, about 2 feet thick, which has been quarried by the farmers of the district many years, for making lime for agricultural purposes, and is, therefore, of considerable value. I entertain an opinion, that this lode will prove itself to be either iron or manganese. Instances of a similar formation are on record in Co. w. The Lanarth mining sets may be there as an in-

stance, and a company is now forming to work the set for those two specific purposes—iron and manganese. This lode, with two lead lodes adjoining, is of sufficient importance to form a mine of itself; and I make no doubt, but in a very short time, with care taken at its commencement, great and permanent profits will be derived therefrom.

**Method of working the Umler Lode.**—I should recommend, in the first commencement, that the loose stones in the lighter parties, close to the stream, be entirely cleared away, so as to open the backs fair; then remove the hanging wall, as far as the limestone extends, which must be carefully picked over, and stacked away. The upper and under veins will then be easily dug out, which will be found to be mixed with a decomposed slate, or shale. This will form the coarse number, which may be conveyed to the washing-mill, and heaped up, ready for manufacturing. When the upper and under veins are conveniently cleared out, the men must very carefully extract the fine killas (Vandyke) from the bowls in the killas, and deposit it in the bags, or in clean casks, and place it in some convenient place, under cover. When all the bowls are cleared out, the men must then break up the strata of killas, which will be easily done, without the use of the hammer, or powder; and as they are one piece after another broken off, fresh bowls will present themselves, which, by the assistance of a few boys, can be cleared out and bagged as fast as two men can break away. In like manner, the whole process should be carried on, up the entire range of the set. By this simple and inexpensive mode of procedure, I have calculated 500 tons of good under may be, in a short time, easily produced.

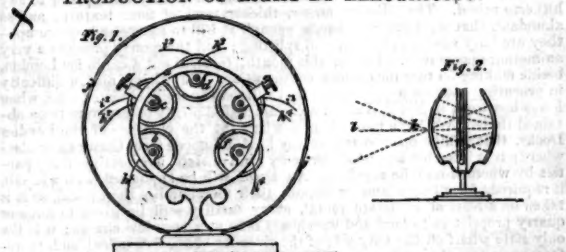
**Manufacture and Export.**—The plan I proposed some weeks since, of erecting machinery to prepare the numbers, do not come within the province of this report, but which, with a perfect series of engineering drawings and specification, will form a work now being prepared at my office, and which will be ready in the course of a fortnight. In making a survey of the ground to be used for the washing process, to which all the coarse numbers must be subjected before they are fit for the market, I find it is very abrupt, being so much out of the level. I have, therefore, set out the construction of four tanks, or dykes, 40 feet long, 5 feet wide, and 5 inches deep. They will be formed by banking up with turf on one side, and the excavated earth on the other, and will present something in the form of the following sketch:—

The upper tank taking the fluid first, which will run from the agitator, precipitating its coarser particles first, then taking a serpentine direction, and entering the end of the next tank, and so alternately, thus:—A small outer wheel, about 8 feet diameter, and 2 feet wide, with an agitator 3 feet long, may be constructed at a trifling expense; it may be driven from the bows in the killas, and deposit it in the bags, or in clean casks, and place it in some convenient place, under cover. When all the bowls are cleared out, the men must then break up the strata of killas, which will be easily done, without the use of the hammer, or powder; and as they are one piece after another broken off, fresh bowls will present themselves, which, by the assistance of a few boys, can be cleared out and bagged as fast as two men can break away. In like manner, the whole process should be carried on, up the entire range of the set. By this simple and inexpensive mode of procedure, I have calculated 500 tons of good under may be, in a short time, easily produced.

**General Remarks.**—The mining operations now in progress at the north-eastern side of the set (if I may presume to advise) I should say at once ought to be suspended, and immediate attention paid to the under works; for, in this, immediate returns at a positive profit will be the result. The under veins, although of small importance in themselves, form a valuable adjunct to a mining set; and, as small appendages make a perfect whole, this one will, I am certain, greatly assist the consummation of so very desirable an object. Should you still prosecute the driving of the level, I think the iron pyrites now being raised therefrom may be turned into account. I have no means of ascertaining their relative proportions; but if they contain 50 per cent. of sulphur, their value would be 50s. per ton at the mine. I entertain an idea that the manufacture of sulphuric acid might be conducted on the spot by the agency of heat—the process is by destructive distillation. I do not pretend to any knowledge of practical chemistry, but the following is the method of extraction in works I have been engaged in:—A furnace is formed about 5 ft. high 4 ft. wide, and 3 ft. deep, in which are placed a series of perforated iron shelves, about 9 in. apart, on which are placed the ores to be roasted; on the floor of this is a furnace box with fire-bars and ash-pit; from the roof of the furnace a pipe leads to a boiler or tank, which is made of lead, and into this a stream of water is allowed to flow for the purpose of obtaining a cooling surface. When the furnace is charged, the fire is lighted in the bottom; and in a short time the ores, by their own combustible properties, assume a dull red heat; the door is then closed, and the sulphuric vapours, passing out by the education pipe into the receiver, where, coming into contact with the cold surface of the same, they rapidly become condensed; this product is sulphuric acid and a little water, which, when drawn off into carboys, is fit for exportation, and is called "oil of Commerce." I have suggested to Captain Hugh Jones how to proceed in the arrangement of the under pits, and other matters connected therewith; his opinions generally seem to correspond with my own. I should earnestly recommend the management of this part to be placed in his hands, for he appears to me to be a person fully competent to be entrusted with the task. I found him affable, intelligent, and persevering, and must congratulate you upon having a thorough practical man as your mining agent.

5, Whitefriars-street, Oct. 6, 1847. CHARLES S. RICHARDSON, C.E.

## PRODUCTION OF LIGHT BY ELECTRICITY.



[Specification of patent granted to Thomas Wright, Esq., Cooper's-hill, Thames Ditton, Surrey, for certain improvements in apparatus for the production and diffusion of light.]—*Newton's Journal.*

This invention consists in producing a permanent light, by continually presenting one or more fresh points or surfaces of carbon, or other suitable material, to the path of an electric current.

Fig. 1 represents the apparatus employed for carrying out this invention. *a*, is a double annular frame, constructed of wood, or other non-conductor of electricity, and enclosing five (or more) discs, *b, c, d, e, f*, the axes of which turn in bearings attached to the frame, *a*. The discs consist of two circular plates of brass, or other metal, enclosing between them a disc of plumbago or carbon (the latter being preferred, somewhat larger in diameter than the brass plates, about one-fourth of an inch thick, and having an angular or V-shaped edge. The axes of the discs, *b, d, f*, are mounted in bearings fixed to the frame, *a*; and the axes of the other discs, *c, e*, are mounted in sliding carriages, which can be moved backwards and forwards by means of the screws, *g, g*. The discs are made to rotate by means of an endless band, passing around pulleys on their axes, and connected with wheelwork, which is actuated by a weight or other prime mover, so as to cause the discs to rotate with a slow uniform motion; and a current of electricity being then passed through the series of discs, a brilliant light will be produced at those edges of the discs that are adjacent to each other. A current of electricity may be caused to pass through the discs, by connecting one wire of a galvanic battery with the axis of the disc, *b*, and the other wire with the axis of the disc, *f*; but, in order to economise the power, the patentee prefers to separate the battery into four parts, and transmit a separate and distinct current to each pair of discs, by means of the wires *h, i, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z*. In order to produce the desired effect, the discs, *c, e*, are to be brought into contact with the discs *b, d, f*, by turning the screws, *g, g*; and, as soon as the electric current is established, and the points of contact are sufficiently ignited, the discs, *c, e*, are to be moved out of contact with the discs, *b, d, f*, by means of the screws, *g, g*; and the brilliant and permanent light will continue to be evolved in adjacent parts of the discs, so long as the discs are kept rotating, or, if the electric current continues to pass. In order that the electric light, or, if so, suitably diffused, the apparatus is enclosed in a ground glass globe, of a suitable whole of the light is required to be thrown in one particular direction, the whole arrangement of reflectors is employed, as shown at fig. 2.

The patentee does not confine himself to the apparatus, nor to the precise arrangement of mechanism shown; but he claims one or more fresh points or surfaces of carbon, or other suitable material, to the path of an electric current.

**HEAD.**—A gentleman has discovered a plan

by which he can send a ball not cost more than three times as much as the hours, by a railroad, and other *ceteris*. He can (he says) transport telegraph, including New York, in a day of 10 hours, 400 tons of merchandise, from Cincinnati, exceeding the usual rates, and that without steam or horse power. *Cincinnati Times.*—[We have for some time had some such project in our mind's eye. Ever since Morse began stretching his wires along the railroads, we have been made miserable in those slow-going things—the lightning getting the start of us, and telling all the news in advance of our lazy-going concern. What does the Cincinnati man intend? To stretch four wires, two for a platform for a vehicle to run over, and two overhead to steady the lightning vehicle, and then propel by electricity? Railroads are certainly behind the age, save to carry freight, as ships, sloops, and canal-boats do.]

**NEW YORK EXPRESS.**—A gentleman has discovered a plan by which he can send a ball not cost more than three times as much as the hours, by a railroad, and other *ceteris*. He can (he says) transport telegraph, including New York, in a day of 10 hours, 400 tons of merchandise, from Cincinnati, exceeding the usual rates, and that without steam or horse power. *Cincinnati Times.*—[We have for some time had some such project in our mind's eye. Ever since Morse began stretching his wires along the railroads, we have been made miserable in those slow-going things—the lightning getting the start of us, and telling all the news in advance of our lazy-going concern. What does the Cincinnati man intend? To stretch four wires, two for a platform for a vehicle to run over, and two overhead to steady the lightning vehicle, and then propel by electricity? Railroads are certainly behind the age, save to carry freight, as ships, sloops, and canal-boats do.]





Mining Correspondence.

ENGLISH MINES.

**BARRISTOWN.**—We have another part of the lode in the shaft sinking on the 30th, it is from 10 in. to 1 ft. in width, composed of white iron and lead, heading the same as the part of the lode sunk through. In the 18 ft. level end west the men are rising against the shaft; in the winze, sinking under the 18 ft. level, behind this end, the lode is about 1 ft. in width, and is formed on the foot wall of the slide, or channel of ground, where we have hitherto been at fault; it has continued this course down with a regular south underlay, of about 6 in. in a fathom, for the last 6 fms. from the point where the lode in its north underlay came in contact with the slide; this I consider is either leading to a flat part of the lode under, or forming itself into a south underlay with the slide, or channel of broken ground, for its foot wall; it is worth from 84 to 104 per fm., evidently gaining strength from dropping branches falling in with it in going down; the rise, over this, working on tribute, is worth about the same, and as high up as the point where the lode came in contact with the slide; the flat part of the lode lately cleared under the 18 ft. level is looking well, worth from 184 to 204 per fm.; the lode in the 18 ft. level end east is in unsettled ground; it is about 1 ft. wide, and without ore. The 13 ft. level end west is still off the lode; the stopes, in the bottom of the 12 ft. level, on middle lode, east and west, are worth about 84 to 104 per fm.; in the adit end east we have branches of white iron, slightly impregnated with lead; it is now 30 fms. from the end of the workings at Nanglea. We hope to complete shipping the lead by Tuesday; the quantity will be from 40 to 45 tons. Oct. 1.

**BEDFORD UNITED.**—At Wheel Marquis, we hope to complete the sump winze 11 fms. under the 80 ft. level, by the end of this week, when we shall immediately commence driving the 90 ft. level east and west; the lode in the sump winze, sinking on the south lode only, is 2 ft. wide, and worth from 504 to 604 per fm. The bottom levels are stopped, as the intended 90 ft. level will come under the run of ore ground gone down in these levels. We have commenced cutting a plat in the 80 ft. level, preparatory to sinking the engine-shaft; the lode in this level east is 3 ft. wide, producing saving work; and in the western winze, in this level, the lode is 18 in. wide, composed of spar, munda, and ore—saving work; in Harvey's winze, in this level, there has been no lode taken down. The 58 ft. level east is stopped for the present; and the men are put to cross-cut south, in the 70 ft. level, to intersect the south lode. The lode in Hooper's rise, in the 58 ft. level east, is 15 in. wide, producing good stones of ore. At Liscombe, there is no important alteration. The lode in the 25 ft. level east of the south engine-shaft, and in the adit level east, remains much the same as for some weeks past. We weighed, at Morwelham, on Friday last, July ore, 110 tons (21 cwt.), 2 qrs.; and sampled August ore, computed 117 tons (21 cwt.)—real good quality of ore. We have about 7 tons of good tin ore nearly ready for market.

**CALLINGTON.**—The engine-shaft, at Kelly Bray, is 6 ft. below the 35 ft. level; in this level, we are still cross-cutting towards the lode. In the winze, sinking below the 25, the lode is from 4 ft. to 5 ft. wide, principally composed of quartz and munda, with copper ore. In the stopes, in the 20, the lode is 4 ft. wide, intermixed throughout with copper ore. In the 70 east, we have commenced rising; the lode is worth 84 per fm.; the back will stop at 504 per fm. In the 100 ft. level south, north mine, the ground is again become soft for driving, the lode producing work of a moderate quality; in the north end, the ground continues soft and congenial—the lode of a very promising character; the back will work at a moderate tribute. In the 90 north, the lode is poor; in the south end we are opening tribute ground. In the 70 north, the lode is producing silver-lead ore; the back will set at a high figure. In the south mine, the ground being rather hard, no lode has been taken down, in either of the ends, since last report.—Oct. 4.

**CASCADE.**—We have commenced driving the adit level on the cross-course, or lead lode, where we have already discovered a small vein of quartz, containing copper ore, munda, and blende—thus proving, in the five lodes we have already opened, that mineral exists in each, large quantities of which will, no doubt, be produced at the adit level, without the aid of machinery. The adit is now being driven by six men, at 55s. per fm.—Oct. 6.

**COATLITHE HILLS.**—The level, east from A shaft, has been driven about 3 ft. during this week; the vein in the end is nearly a foot wide, composed of iron rider, spar, clay, and stones of lead ore; on the whole, the prospects are more favourable than they have been for some time past. In the horse level the men have risen within 3 ft. of the bottom of the limestone; and it is probable the water will be let down from the shaft during the next week.—Oct. 2.

**COOMBE VALLEY.**—It gives me great pleasure in being able to lay before you a report of the present very prosperous state of our works. In my last, I had the unpleasant task of recording the gloomy appearance of the quarry being stopped, as we then were, for want of water to drive our machinery; but, at the same time, I intimated it would not long remain in that depressed state. My predictions are now verified, to my entire satisfaction; for, immediately on having a flush of water, to drive the wheel, our pumps were got to work, and, in less than three days, the pitmen were again busily engaged. On removing the remains of the course of waste that has cost us so much trouble, they came upon a beautiful even floor of slate, in quality far superior to any hitherto raised. The slabs are larger, thicker, and of finer texture; and so abundant, that we have not hands enough at hill to clear and square up—they are busy sawing, planing, and splitting; and the quarry presents a very animating appearance. I hope, this month, to clear out a cargo for London, beside making 50 tons for country consumption. I find, just now, a difficulty in procuring good quarrymen; but that will soon be easily obviated—for, when I was last week in North Wales, I ascertained that plenty of men were to be obtained there. We have now taken a wharf, at the entrance of the London Docks, that will be open to receive any kind of goods from Cornwall or elsewhere; it is intended as a depot for every kind of slate, irrespective of any parties by whom it may be supplied. An agent will be appointed, who will sell, if required, for all who land or deposit their merchandise there; and, as it is taken on a lease of moderate rental, every facility will be given to mine or quarry proprietors to land and warehouse here at a very low charge; it is the only slate wharf on the City side of the river for above five miles; and, therefore, possesses advantages over many others. We have now purchased the freehold of the quarry set; and the company's affairs may be said to be in a very flourishing condition.

**CUBERT SILVER-LEAD.**—The lode in the eastern end, in the 35 ft. level, is 1 ft. wide, yielding a little lead; in the western end, in this level, the lode is still large, from 2 to 3 ft. big, all saving work, but of coarse quality, worth about half a ton of lead ore in a fathom. In the 25 ft. level, going east, the lode is 1 ft. wide, composed of soft spar, mixed with munda and lead; in this level, driving the lode is 15 in. wide, of a very promising character, worth from 84 to 104 per fm. In the 18 ft. level west the lode is also very kindly, and worth a ton of per fm. On the whole, we consider the levels are looking well, and nothing new in the engine-shaft, nor in the tribute department, since last report.—Oct. 1.

**DARTMOUTH.**—We have erected our capstan shears and whim; and our large wheel pit is sunk 50 ft. deep, 60 ft. long, and 77 ft. wide; but, in consequence of the rain, and the softness of the ground, we have had a run of water in the pit, which has prevented the masons from laying the foundations, and so do so shortly. We have all the stones cut, timber on the masonry, and we have brought up a lobby to unwater the same, about 70 fms. from the shaft; it is secured, and the Two Brothers' adit is completed. We have built a timber-house all complete, and put all our buildings in good repair; the weather is favourable, we hope to get our wheel at work in a few days, and shortly after we hope to commence breaking tin. We have also a number on the mine to carry out all our operations, as well as iron men to complete the same, except a few fathoms for rods.—Oct. 6.

**EAST TAMAR UNITED.**—In giving you the result of my inspection of your adit, in the first place, to notice the new lode, lately discovered, in the engine-shaft, now about 46 fms. deep, which was met with 2 fms. from its underlay north, cut out at the north end—the shaft being sunk from it, across, instead of as usual lengthways, with the lode; its size is about 1 ft. wide, carrying a leader of good ore, munda, and ore; which, in the 30 ft. level, is general character I like much; and I am inclined to believe it will increase in size in depth, as I perceive the south wall is more down than the north—the work at surface broken from it looking well, and the quality of its ore. The south lode, in old men's workings, I did not see, but am told that, in the 30 ft. level, there was a kindly lode driven from it, at 50 fms. deep, a cross-cut, of about 17 fms. would cut it; and my opinion is, that, at what depth it would be advisable to drive a cross-cut, I see no objection to doing this, as soon as the shaft shall have obtained a depth of (say) 90 fms. This will give a back on the old lode of about 20 fms.; and the new lode underlies faster, so far as we can see it, than the old one, the two cross-cuts will not collectively be so great as at a greater depth; besides, supposing the shaft be continued to the 60 ft. level, where cross-cutting to the lode, and the new lode should then also be cut rich, or even otherwise, you must return to a shallow point, to work to—clearly showing that the roadways, and, in my opinion, the new lode will also, be to see the lode at not a greater depth, than the 30 ft. level, especially as the new lode is near here on promising at this depth; also, the water can all be lifted by surface by one pump—life. Your engine, pitwork, and adit, are, I am pleased to state, all in good order, and well laid out, and the engine-shaft of good dimensions, and such as is adapted for all its requirements. At Rix Hill, I find, on the back of the lode, which is about 180 fms. south of the copper lode, considerable old men's workings for a great length. In the eastern part of your set, a cross level has been driven for about 30 fms., to take the lode west of the cross-course at about 12 fms. deep, and a shaft sunk through. The lode here is large and productive; its size is about 4 ft. wide, with a leader of good tiny work for about 1 ft. 6 in. on the south part; the present end, although not so good as further back, is still very kindly, with good capels, such as I like to see about a fathoms; there have been driven about 6 fms. only on the lode. I do not think Capt. Paul has over-estimated the produce in stating the work to be 100 tons. This lode is much better in the bottom than in the back; and I have,

I think, reason for thinking the productive ground will lengthen in depth. Here I should advise the level to be continued west, both for drainage, and also to cut off the surface water, and the shaft to be sunk, so as to prove if my supposition as to its better quality is correct, as far as it can be accomplished, till such machinery as shall be decided upon can be applied—the which, as I suppose, is the resident, will be at rods from the present steam-engine, which is of sufficient power to work both this, as well as the copper lode, to a considerable depth; and, in case my opinion is verified, as to the productiveness, it will then be advisable to apply a steam stamp, grinder, and drawing machinery, in addition. Upon the whole, I think most favourably of these concerns; and, in concluding this hasty sketch, thereby, allow me to congratulate you in their possession; and I sincerely wish every success I anticipate in the prosecution thereof.—JEAN HARRISON: Sept. 27.

**EAST CROWDALE.**—The ground in our engine-shaft is rather harder to sink than when last reported on—having got into branches of spar; these branches contain ore of a rich quality; we have sunk, in the past week, 4 ft.; the shaft is now down 46 fms. 4 ft. In cutting plat, in the Rix Hill shaft, we have broken some excellent tin and lead, and are proceeding as expeditiously as possible to complete this job, in order to begin to sink; the ground in the adit level at Rix Hill, is not so speedy for driving as it has been; the lode is about 2 ft. wide, composed of peach, capel, munda, spar, and spots of tin—a kindly lode indeed; our engine and pitwork are in good order.—Oct. 2.

**EAST TAMAR CONSOLS.**—The lode in the 60 ft. level, north from Harrison's shaft, is 2 ft. wide, saving work; the lode in the 60 south is 2 ft. wide, fluor-spar and ore, and very kindly. The lode in the 54 north is 20 in. wide, fluor-spar and ore, saving work; the lode in the 54 south is 18 in. wide, fluor-spar and ore—a very promising-looking lode. The lode in the 46 north is 20 in. wide, fluor-spar and ore, saving work; the lode in the 46 south is 20 in. wide, capel and spar, unproductive at present. The lode in the 38 south is 14 in. wide, composed of pryan, spar, and ore, good saving work. At Charlotte's, the lode in the shaft is 2 ft. wide, fluor-spar and ore, looking very kindly. The lode in the 11 ft. level is 18 in. wide, saving work.—Oct. 6.

**GADAI.**—We have cut through the West Point lode, where the Hondd's cave lode is united with it, both being together about 5 fms. wide, and containing some copper ore. In cleaning up the old shaft, which is looking very promising, we have raised some fine stones of copper. The adit end, in the sulphur lode, is looking well, and about 15 fms. further east the granite and killas meet; and the Eox lode forms a junction with the sulphur lode at the same place; and, no doubt, will produce large quantities of copper ore, which is useful when such union takes place, and favourable indications exist.—Oct. 6.

**GREAT MICHELL CONSOLS.**—The lode in the 35 ft. level, east of the engine-shaft, is still very large, full 7 ft. wide, and altogether improved in its general character, containing munda, fluor-spar, with more ore, and ground somewhat easier of progress; in this level, west of the engine-shaft, the lode for the width of the end (54 ft.) is carrying abundances of munda, intermixed with ore, capel, and spar—a very promising lode; in the 35 ft. level, west of the sump winze, the part of the lode now being carried is 3 ft. wide, consisting of munda, spar, peach, capel, and ore, producing some saving work. The sump-men have been engaged stopping down a piece of lode in the east end of the sump winze for plat, near the present bottom, where it is 5 ft. wide—3 ft. on the north part is a good ore lode, worth 204 per fm., apparently dipping west; the plat being completed, we have this day commenced sinking below the 35 ft. level, and find the ore holding down, with every appearance of further improvement.—Oct. 6.

**GREAT WHEEL MARITHA.**—The lode in the 40 ft. level east is without any material alteration since last reported, with the exception of a vast increase of munda; the strata, in the north side of the lode, consists of white decomposed killas, intermixed with fine munda, clearly showing that the lode is passing through a country, from which favourable results may be anticipated in depth; the ground continues good for driving.—Oct. 2.

**HEIGNSTON DOWN CONSOLS.**—The lode in Bailey's engine-shaft is 5 ft. wide, composed of splendid gossan, spar, and tin, producing some good work, and very promising. The lode in the 20 ft. level west remains without alteration, producing a little tin; the 20 ft. level east is stopped, and the men put to sink a winze therein; the lode in the pitches, in the backs of the 20 ft. level, east and west, continue to yield good returns; the ground in Buddie's adit is favourable.—Oct. 5.

**HOLMBUSH.**—The ground in the diagonal shaft, sinking below the 120 ft. level, is still of that favourable character as reported on; the lode in the 120 ft. level, west of the great cross-course, is disordered by several small cross-courses. The lode in the 110 ft. level south is 2 ft. wide, composed of flookan, spar, and stones of lead; this level we are driving with all possible speed to get under the lead ground we have driven over in the bottom of the 100. The lode in the 100 ft. level south is 3 ft. wide, composed of spar and lead, worth 104 per fm.; the pitches in the back of this level are not so productive as they have been; but the ground is still yielding some very good lead ore, being taken away at a tribute of from 10s. to 12s. in the 11, on the value of the lead. The lode in the 90 ft. level south is 20 in. wide, composed of soft spar, flookan, and stones of lead. We sampled at Calstock Quay, on Friday last, August and September copper ores, computed 84 tons.—Oct. 5.

**KIRKCUDBRIGHTSHIRE.**—The lode in the 50 ft. end, driving west, is 5 ft. wide, producing one ton of lead per fathom—set to six men at 44 per fm. In the 40 ft. end, driving west, the lode is 4 ft. wide, producing half a ton of lead per fm.—set to six men at 44 per fm.; the branches of lead, taking north, in this level, are producing about one ton of lead per fathom; the stopes, in the back of this level, are looking well, producing one and a half ton of lead per fathom—set to six men at 44 per fm. The lode in the 30 ft. level end west is 4 ft. wide, improved since last reported, producing half a ton per fm.—set to six men at 54 10s. per fm.; in rising, in the back of the 30 ft. level, the lode is producing one ton per fm.—set to four men at 64 per fm.; the stopes, in the back of this level, are yielding about three-quarters of a ton per fm.—set to six men at 54 per fm.; the stopes, in the bottom of this level, are producing about one ton per fm.—set to four men at 34 per fm. The lode in the 20 ft. end west continues large, producing two tons per fm.—set to six men at 44 10s. per fm.; the stopes, in the back of this level, are producing about half a ton per fm.—set to six men, in two bargains, at 32 5s. per fm. The crushers are fixed into their places, and we expect to have this machinery in full working order by Wednesday, the 6th current. On the whole, our prospects are looking well; and I clearly see we shall be able to increase our returns.—Oct. 2.

**LEWIS.**—The sumpmen have sunk 6 ft. below the 60 ft. level, and are now preparing to fix beasers and cierns at that place. We find the lode split, and in a disordered state; the south course is 18 in. wide, producing a small portion of tin. The lode in the 60 end east is 5 ft. wide, worth 124 per fm., and very kindly; the ground in the south cross-cut, in the 60 ft. level, west of sump winze shaft, is now very favourable. The lode in the 60 east is 4 ft. wide, worth 64 per fm. for tin, and very promising; the lode in the 50 east, on south branch, is 10 in. wide, worth 134 per fm. The lode in the 30 end east is 2 ft. wide, composed of spar, munda, peach, and brent, with some spots of tin. The lode in Praed's shaft, sinking below the 20 ft. level, is 5 ft. wide, worth 54 per fm., with a very promising appearance. The tribute pitches, at the back of the 50, on south branch, are looking very well; we have 17 pitches now at work, at an average tribute of 6s. 7d.—Oct. 2.

**MENDIP HILLS.**—The lode in the 38 ft. level, south of Stainsby's shaft, continues much the same as last reported on, composed of quartz, flookan, and particles of lead at times; the lode in the winze, sinking below this level, is greatly increased in size during the past week, and, on the whole, presenting more favourable indications than we have had for some time before—it now being over 4 ft. 6 in. wide, composed of soft flookan, white spar, and strings of lead. In the slag department we have not done anything towards removing the top rubbish from off the beds of slags since my last communication, as the whole of our surface force have been engaged in excavating the foundation for the engine-house—this, I am glad to inform you, is completed, and the masons busily engaged in laying in the brickwork for the bed of the engine, the greater part of which, and the boiler, was brought on the mine last Tuesday and Wednesday.—October 4.

**SOUTH TAMAR UNITED.**—The plunger lift is fixed in the 80 ft. level, the water in fork, and the engine working extremely well; the shaftmen are engaged in completing the dividings, casings, and footway, to make it secure for dropping our next lift under the said level. We shall commence clearing the 80 south to-morrow.—Oct. 5.

**SOUTH WHEEL TRELAWEY.**—Snell's engine-shaft is in course of sinking with nine men, down 18 fms. under the adit; ground favourable; water just the same as last mentioned.—Oct. 4.

**TRELAUGH CONSOLS.**—Christie's shaft, below the 110 ft. level, is sinking in the country 6 ft. below the 110 ft. level; in the 110, east of ditto, the lode is small; in the end we are driving south in search of more lode; in the 110, west of ditto, we are driving north-west on the cross-course to cut the lode, west of the heave. In the 100, east of Garden's, the lode is about 3 ft. wide, producing stones of ore, with a more promising appearance; in the 100, west of ditto, the lode is 2 ft. wide, but little ore. In the 90, west of ditto, the lode is 10 in. wide, producing about one ton per fathom, worth 54 per fm. In the 80, west of ditto, the lode is 18 in. wide, worth about 74 per fm.; in the rise above the 80 west, the lode is 2 ft. wide, worth 804 per fm.; in height the rise is 9 ft. long; in the 80, east of Garden's, the lode is 2 ft. wide—no ore to value. In the 70, west of ditto, the lode is 2 ft. wide, and has rather a promising appearance; but not much ore. In the 60, west of ditto, the lode is 3 ft. wide, south part ore; it will produce one ton per fm., of low quality. The adit east, on Wheel Parent lode, is 2 ft. wide, with stones of ore, of a very kindly nature, but not sufficient to value; in the new shaft, for Wheel Parent lode, the ground is much as usual—it is now 8 fms. from the shaft.—Oct. 2.

**WEST WHEEL JEWEL.**—In the 57 ft. level, south from Crane's cross-course, on Wheel Jewel lode, the lode not taken down, is 3 ft. wide, worth 54 per fm.; ditto rise, 1 ft. 2 ft. 6 in.; ditto, 3 ft. 8 in. 6 in. In the 50 ft. level, west of Quarry shaft, on Tolarne tin lode, the lode is 18 in. wide, worth 54 per fm.—drove, 1 fm. 4 ft. 6 in. In the 42 ft. level of Quarry

shaft, on the same lode, the lode is 14 in. wide, with a more promising appearance for tin than it has been for some weeks, worth 74 per fathom—drove, 1 fm. 8 ft. In the shallow adit, west of Quarry shaft, on the same lode, the lode is 15 in. wide, producing stones of tin—drove 2 fms. 8 ft. In the stopes, in the bottom of the adit, east of Pryor's winze, on the same lode, the lode is 2 ft. wide, worth 224 per fm.—stopped last month, 6 fms. 2 ft. In the rise, in the back of the 12 ft. level, east of Quarry shaft, on the same lode, we rose last month 3 fms. 4 ft.; this rise is suspended, and the men put in the 43 ft. level to drive south to cut the south lode.—Oct. 4.

**WEST WHEEL MARIA.**—In the eastern engine-shaft the lode is about 3 ft. wide, producing good stones of ore, with every indication of further improvement. We have sunk 4 ft. under the 30 ft. level; and, in this level, we have cut plat, divided and eased the shaft about 7 fms., and driven west about 94 fms.; the lode in this level is from 3 to 5 ft. wide, producing good stones of ore—a most promising-looking lode as can be seen, and ground favourable for driving here; I would recommend driving in this level, with four men, as there is a long piece of ground unexplored; in the western engine-shaft we have sunk 1 fm. 3 ft. 8 in., and cut plat in the 64 ft. level; in cutting this plat, we stripped down the lode, and find it about 8 ft. wide, composed principally of capel, spar, munda, and spots of ore in places. In the 54 ft. level, east of this shaft, we have driven about 44 fms.; the lode in this level is about 3 ft. wide, composed of capel, spar, killas, munda, and spots of ore occasionally; in the cross-cut south, in this level, we have driven about 54 fathoms in ground rather hard for driving.

**WEST WHEEL MARIA.**—The western engine-shaft is down about 4 ft. under the 38 ft. level, the lode in which is 3 ft. wide, producing good stones of ore, and promising further improvement; in this level west the lode is about 4 ft. wide, and producing splendid stones of ore, altogether as fine a looking lode as can be seen. At the western engine-shaft, we have completed plat in the 64 ft. level, and are stripping down the lode; we find it about 8 ft. wide, composed principally of capel, spar, munda, and good spots of ore in places. In the 54 ft. level, east of this shaft, the lode is about 5 feet wide, composed of capel, spar, munda, killas, and spots of ore occasionally; in the cross-cut south there is no important alteration, the ground continuing rather hard.—Oct. 5.

**WHEEL ADAMS.**—We have extended a level east from the top of the rise, in the 50 ft. level; and, having intersected the middle branch, which is small and poor, we continued driving, and have this day cut the quartzose lode, lately discovered in the 40 and 28 ft. levels; we have cut into it about 3 ft., and have not yet reached the hanging wall; the part now seen is worth 74 per fm. As soon as we cut through this lode, we shall rise on its course, and, at the same time, six men in the 40, to sink directly over the rise, which will effect a communication in about nine days; the stopes, on the jack lode, are suspended—the men not being able to work for want of air; but, as soon as the rise, named above, is holed, they will forthwith be resumed; the stopes, in the 40 ft. level, are now working on the quartzose lode—it having formed a junction with the eastern lode, 6 ft. north of Tanking's winze, and they continue so in a southerly direction; but, northerly, they are 4 fms. apart, where the former was lost sight of. We have other men working on this part, whilst others are engaged in removing atile; and I hope that, in about a fortnight, we shall be in a position to give you the extent of ground standing, and its value per fathom. We have intersected a part of the eastern lode, in the 40 ft. level north, which is 1 ft. wide, consisting of quartz, blende, and spots of lead, with favourable ground for driving; the stuff has been removed from the level on the western lode (28), and the timbering will be completed to-morrow, when we shall resume stoping the back. We have about 20 tons of gossan to surface, raised from the 18 during the past week, which shall be assayed in time for my next report.—Oct. 6.

**WHEEL BARBARA.**—I have forwarded to you, by this day's mail, a box of silver-lead ore, that has just been broken from the winze, which is only 6 ft. below the adit level; you will perceive that the ore is rich in quality, and the developments such as are rarely to be met with in a mine of so little depth. I have forwarded a box of similar ores to the offices at Manchester, which I trust will give satisfaction to the shareholders, and the mine will, no doubt, soon yield them a bountiful income.

**WHEEL CURTIS.**—I forward this day a box containing specimens of copper ore taken from the eastern end of Crane's shaft, 25 fms. below adit; also, some from the back of the 20 ft. level, about 25 fms. east of the old engine-shaft. It is most satisfactory, at so early a stage of our researches, to find those results, which exceed the most sanguine expectations entertained by us, or ever set forth to the public by the proprietors of Wheel Curtis. It was never contemplated that ore would be produced before we should reach the 47 ft. level, which is the bottom of the mine; but we are now convinced that we shall be able to raise a considerable quantity of ore above this level, from different parts of the Curtis lode. We have ventilated and cleared the twenty fathom level to the extent of twenty fathoms, west of Crane's shaft; there are fifteen fathoms more to be cleared before we reach the termination of the former workings; we are urging on this work with the utmost dispatch, in order to continue the level to John's shaft, which is a distance of about sixty fathoms. In the course of driving this level we are confident we shall raise copper ore; but, doubtless, in larger quantities as we descend. As there has not been a 20 ft. level driven from Crane's shaft to the old engine-shaft, we cannot ascertain the state of the portion of ground which intervenes between these shafts, till we reach the 80 ft. level. Curtis shaft is now cleared, and ladders placed to the 20 ft. level—we have examined this part of the mine, from the old engine-shaft to Teague's shaft, which is exactly 94 fms. in length; the greater part of the lode in this place has been removed, the portions which remain vary in size, from 3 to 5 ft. wide, composed of spar, munda, black jack, and copper ore. We calculate on being able in a short time to raise a considerable quantity of ore from this part of the mine. The mine is in 20 fms. below adit, the progress in forking out the water during the past few days has not been so rapid as heretofore, in consequence of the increase of water from the 30 ft. level. Crane's shaft is cut down 25 fms. below adit. We have a new horse whim on Teague's shaft, also another for the old engine-shaft. Hallett's shaft (Charlotte lode) is sunk 12 fms. from surface; the lode is now producing very rich munda.—Sept. 30.

**WHEEL FRANCO.**—Boswarva's engine-shaft is completed to the 62 ft. level, and we have commenced driving the cross-cut towards the lode; we expect there will be about 25 fms. to drive, and that it will be intersected in from four to five months. The 47 ft. level cross-cut is driven 89 fms. from the shaft, and have cut the north capels of the lode. From the quantity of water issuing from the end, and other indications, we think we are nearly approaching the main part of it; and judging from the apparent underlay, and from the branches of ore in capels, we form a favourable opinion of the lode when cut in this end. A winze has been sunk about 3 fms. in the bottom of the 32 ft. level, east of Boswarva's engine-shaft; this winze was commenced in the bottom of the old level, which was driven on the north side of the lode, and by sinking it perpendicular, we expect to intersect the ore part in from 1 to 2 fms. further sinking; it is commenced about 20 fms. east of the 47 ft. level cross-cut, and is intended to be communicated with that level. The 32 ft. level, driving east of Spry's shaft, is in a large ore lode, of a promising character; and, judging from the ground in the 20 ft. level, we hope, ere long, this end will be laying open some tribute ground. In the 10 ft. level, east of Burnell's shaft, there is a promising lode, producing good stones of ore. The middle level, west from Burnell's shaft, is communicated with the rise put up from the back of the 10 ft. level; in driving this level home to this point there has been a good ore lode; the rise above alluded to is still being put up above the middle level, and is laying open good tribute ground. The middle level, east of Vosper's shaft, after having been driven nearly home to the cross-course, is suspended, and the backs let on tribute. The tribute pitches, with the exception of two or three, which are worked out, are without any material alteration.—Oct. 2.

**WHEEL MARY ANN.**—Barratt's shaft is sunk 10 ft. under the 50 fathom level; the lode is 1 ft. wide, and worth 104 per fm. The lode in the 30 fathom level, south of Barratt's shaft, is as was last reported. The 15 ft. level is holed to Pollard's shaft, and the men are now cutting a plat at that level, which will be completed by to-morrow evening, after which they will commence to drive south on the lode. The stopes are looking well. Pollard's shaftmen have divided the shaft, and are now cutting bearer holes, putting in bearer, cierns, &c., so as to sink the shaft under the 15 ft. level with all possible dispatch.—Oct. 4.

**WHEEL TRELAWEY.**—The men in Phillips's shaft are changing pitwork, putting in rods, &c., preparatory to sinking under the 52 ft. level. The 52 end south is worth 104 per fm.; this level, north, is worth 134 per fm. The lode in the 42 end south is large, and worth 64 per fm.; the same level, north, is worth 94 per fm.; we have commenced sinking a winze under this level where the lode is large; and worth 104 per fm.; the stopes, in the back of this level, are a little improved. The lode in the 32 and north is 1 ft. wide, composed of can and lead, and worth 84 per fm.; the stopes, in back of this level, are looking well. We are again obliged to suspend sinking the winze under the 22 ft. level, in consequence of water. Trelawney shaft is progressing much as usual; and I cannot speak of any change in the 22 cross-cut east. At Vivian's shaft, the lode in the 20 and north is 1 ft. wide, composed of gossan, with stones of lead disseminated throughout; in sinking the winze, under this level, the lode is large, and worth 64 per fm.; the lode in back of this level is not so good as last reported, but still producing some good ore.—Oct. 5.

We are glad to receive such encouraging reports from the Barbara, Cascade, and Gadair Mines—all connected with the British Mining-offices. This shows that the mines have been selected with good judgment, and that the results are likely to prove highly satisfactory. The Lydford Castle Mine has also been brought out at the same offices; and several tons of silver-lead ore have already been raised.

**WHEEL BERTH.**—We learn that an improvement has taken place in this mine—a lode of tin having been cut into the cross-cut 3 in., but the opposite wall was not seen on Monday.







have paid their calls to the purser, or to any other party authorised by him to receive them.

**BUDNICK CONSOLS.**—A meeting of adventurers was held at the account-house, on Monday last, when the accounts for July and August, as follows, were passed:—Balance at the end of June, 1885, £8,841 17s. 2d.; 1885, 17s. 10d.; By ores sold (less dues), 1690l. 17s.; balance against the mine, 188l. 0s. 10d.

**COOMBE VALLEY SLATE COMPANY.**—At the quarterly meeting of shareholders, held at the Reading Rooms, Coggeshall, Essex, Mr. BEARD in the chair, the accounts to the 31st August were presented, showing balance in favour of the company of 631l. 9s. 3d. The accounts were examined and passed, and the secretary directed to make immediate arrangements for taking a lease of the Crackington Harbour, and the several quarries belonging thereto; the All-sard Quarry, adjoining the Crackington Harbour, &c.—That Coombe Valley Quarry, now the freehold of the company, be let on tribute to the quarrymen of the district, at a price to ensure remunerative profit to the company; and all the available stock of slate on the quarry to be shipped for London at the earliest opportunity.—A vote of thanks was then passed to the gentlemen forming the committee of management, &c., for the past half-year.—[A report from the quarry appears among our "Mining Correspondence."]

**TAVY CONSOLS.**—The bi-monthly meeting was held on Tuesday last, at the Central Hall, Plymouth, when it appeared, from the statement of accounts, that there was due on forfeited shares, 21l. 16s.; July costs, 258l. 13s. 6d.; August ditto, 211l. 5s. 8d.; dues on ores, 33l. 5s. 2d.; merchants' accounts, 224l. 19s. 1d.; 749l. 19s. 5d.—On the credit side, there was a balance by last account of 301l. 11s.; cash for ore, 291l. 19s. 3d.—leaving a balance against the mine of 156l. 19s. 3d.—The captain's report, which was considered very favourable, stated that, by the 15th of this month, he should sample about 130 tons of copper ore, worth nearly 400l.; and it was resolved, that a call of 5s. per share should be made.—Mrs. Finlay's five shares, which had been forfeited, were restored, as Capt. Amos proved that he had authority to pay them, and had promised to do so, but had forgotten it.

**WHEAL SARAH MINING COMPANY.**—A meeting of adventurers was held at the offices, George-yard, Lombard-street, on Thursday, the 30th Sept.—Thomas Field, Esq., in the chair.—The statement of accounts presented showed an expenditure, for nine months (from January to September), of 247l. 15s. 6d.—leaving a balance due to the treasurer of 57l. 1s. 4d., in addition to unpaid calls. The accounts, as submitted, were received, and passed; and a call of 10s. per share made, payable forthwith.

**MEXICAN AND SOUTH AMERICAN COMPANY.**  
SIR.—The directors of this company, after a cessation of paying dividends for nearly two years, have made a call of 12 per share, payable on the 26th inst.—and this in face of the present disastrous money panic—to prosecute some new discovery, of which, I think, the public have seen enough, and also received a severe lesson. The company make it a rule, it is understood, never to publish any accounts; and this course of proceeding is a most improper act on the part of the directors—for there are, evidently, some proceedings they wish to keep from the body of shareholders. It has been ascertained as a fact, that the directors have advanced here money, to a large amount, on the security of Mexican bonds, at the highest price. This, it is believed, forms the true reason for the call to replace the amount lost by this improper investment. On referring to the terms of the prospectus of the company, it appears, beyond doubt, that the directors were perfectly unauthorised to enter into such a transaction, and the shareholders are earnestly recommended to convene a public meeting, to protest against the proceedings of the company. The directors, having acted contrary to the terms of the prospectus, have rendered all their acts illegal; and the shareholders can recover back their deposits of 7l. per share, by taking proceedings against the directors. A SHAREHOLDER.  
London, Oct. 5.

#### MINE CAVERNS.

SIR.—I observe, in one of the mine reports, that a cavern has been cut into, and converted into a whim-plat. A description of such places, with transverse plane sections, showing their peculiar forms, and the nature of their internal surfaces, would be very interesting; and will, doubtless, be furnished by some of your contributors. Could not the captain or purser contribute their mite to the general interest of your Journal?—A. T. J. MARTIN: Penzance, Sept. 27.

We have pleasure in referring to the advice received from the Alten Mines, which are of a very satisfactory character. The estimated produce continues to improve; and we understand that the returns in copper to the smelting-house, from April to May, inclusive, have exceeded the estimates by nearly 10 tons of copper. A shipment of copper (about 35 tons) is now on the way to this country. The improved state of the mines will, it is expected, make good the deficiency in the produce of last winter.

**WHEAL ANNA MARIA.**—In another column will be found an extract from the *Western Mercury*, relative to this mine, from which it appears, that the indications are highly promising. We have received a few particulars from an Exeter correspondent, in which he states, that the deeper they get the better are the appearances. The first meeting of the committee of management takes place on Monday, after which we hope to receive the reports regularly. It is expected they will then go to work in earnest, by putting up an engine and other necessary erections and machinery for working the mine in a spirited manner; and the general opinion is, that most advantageous results will follow.

#### MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

**CALLINGTON MINE.**—The Kelly Bray lode is producing a great deal of copper, but not rich in quality, as the muffle is too strong for the copper yet, which prevents it from bringing a high price. However, this is a most favourable feature, and worthy of notice; for "muffle rides a good horse," and that rich mine in the west of Cornwall, as well as the eastern district, are generally found to produce similar indications at shallow levels. I have not a doubt on my mind that, in the next level, one ton will be of more value than two tons at the present depth. The floors are full, having a good pile of saving work; and many hands are employed dressing.

**COATLITHE HILLS.**—The general appearance of the leader of lead is very favourable, and it is fully expected that before long it will be more productive than it has been yet. Preparations are being made for dressing a small parcel of lead, which will be ready for sale next week.

**EAST ALVENNEY.**—The prospects here continue very encouraging. The tin lode, which they cut on Tuesday last, in sinking the shaft, is estimated worth from 50l. to 60l. per fm. in sight; they are also breaking, from the same lode, some very good stones of copper.

**KIRKCUDBRIGHTSHIRE MINING COMPANY.**—A valuable tract of mining country having been granted to this company by the Earl of Galloway, a meeting will be held on Tuesday next, to decide upon the method of working it. The sets embrace upwards of 80 square miles, not in one particular spot; lead yielding 30 oz. of silver to the ton has been found, and here the first trial will be made, by sinking a shaft on the intersection of the lodes; to do this, it will not take more than 200l. in money, and about six months' time. The shares are already in great demand at a premium.

**NORTH WHEAL CAMEL.**—I have received the enclosed report of North Wheal Camel, and beg that you will insert it in your next Journal, together with the further information herein contained:—"North Wheal Camel Mine, Sept. 28.—Since the last two monthly meetings, 10 fms. 4 ft. have been driven in the 26 ft. level; the lode, for the last 5 fms. has been very much improved, averaging about 18 in. in width, and is, in its general character, a very promising lode, containing muffle, capel, spar, and in places rich spots of copper ore; the ground is also much easier of progress, and the end is now being driven at 3l. per fathom."—No doubt many of the shareholders have, from time to time, seen reports by captains and agents of undoubted judgment and veracity of the prospects presented at different times in Great Mitchell Consols Mine, from which reports, and the flattering appearances of the lodes throughout this set, and running, as the same do, into its neighbour, North Wheal Camel, the latter company have worked with unabated vigour, to claim a position of having a good dividend-paying mine, and it is highly gratifying to those interested in the respective workings, to hear that, within the last few days, a lode was cut in Mitchell Consols, 7 ft. big, and worth 40l. per fm., which lode (using the captain's expression) "he is as sure of it in Camel as he is in Mitchell"—thus, by the above, it even proves that, ere long, their claims will be realised.—*Venland.* Ground here much more favourable.—*Lishead Ducky Consols:* Water forked, shaft cleaned up, and commenced sinking; ground in the bottom much more favourable; a very good kille, and lode improving very fast; will nearly pay the whole working at present.—D.

**POISAITH CONSOLS.**—They are progressing favourably in sinking the shaft, which is at present the principal underground operations; the tributaries are getting on very well. Arrangements are making for the removal of the engine from Wheal Ryalton, which will be on the mine in the course of a few days from this time; as there is but little water, it was thought that this engine, which is a 17-in. cylinder, would put the shaft down to about 40 fms. below the adit, and will prove useful for a crusher, &c., should the engine warrant a larger and more powerful one—the purchase of which, with erection, &c., will not amount to more than 1l. per share.

**WHEAL ANNA MARIA (near Exeter).**—We have seen some excellent pieces, or specimens, of gossan and muffle from the new mine at Dunsford, near this city—the latter is most beautifully marked with copper. Most heartily do we hope that the enterprising adventurers will succeed in their discovery of copper, and the indications already are said to be scarcely inferior to the original of the celebrated Wheal Maria, near Tavistock; and, if the opinion of some of our native geologists prove correct, this district abounds with valuable mineral, and must, if worked, prove a source of great benefit to the neighbourhood and to Exeter.—*Western Mercury.*

#### ACCIDENTS.

**Wheal Rose.**—Thomas Edwards, a little boy nine years of age, was playing near an old shaft (40 fms. deep), when, rolling in a heavy stone, he fell with it, and was taken out dead, and shockingly mutilated. This shaft had not been worked for 25 years, and yet the mouth had never even been covered over, or guarded in any way.

**Wigan.**—At the conclusion of the inquest on the body of William Rutter, who was killed by an explosion at Mr. Eccles's Colliery, the jury returned a verdict of "manslaughter" against Peter Rutter, his brother, through whose negligence, in leaving his lamp uncovered, the accident occurred. Peter still lies in a very precarious state.

**Sheep Colliery, Oldham.**—W. Crossley fell down a coal-pit, belonging to Mr. A. Lees (39 yards deep), and was killed on the spot.

**Cyfarthfa.**—P. Edwards, aged 11 years, was killed by a fall of stones in one of the levels.

**Onion Bed Colliery, Portobello.**—W. Masfield was killed by a fall of coal.

**Serious Injury from the Heavy Rains, and Suspension of Work in Coal Mines.**—Early on Wednesday week, a violent storm of thunder, lightning, and rain visited Wigan and the neighbourhood, and the rain continued to pour in torrents for several hours. At daybreak, the river Douglas was found to be swollen to a great height, and the adjacent fields nearly all flooded. In one of these fields, at the back of Mr. Eccles's mill, and near the mill of Messrs. Taylor and Brother, in Church-street, the roof of an old coal pit gave way in two places, and for five or six hours the stream rolled impetuously into the hollow, carrying large quantities of soil, and other materials into the old mine below, which it is anticipated will seriously interfere with the working of all the mines in the immediate neighbourhood. Several of them are already flooded out; indeed, the quantity of water carried into the hollows must be immense, for at the spot we have just mentioned there was a fearful whirlpool formed, which for hours was unapproachable.

**Colliery on Fire.**—We are sorry to state, that a fire broke out in one of the Duke of Buccleuch's coal-pits, at Cannobie, on Saturday, the 18th Sept., which, notwithstanding the utmost exertions of his grace's agents and workmen, is still unsubsided. It appears, that the workmen, being about to leave off work on the forenoon of the day above-mentioned, were assembled at the bottom of the shaft waiting to be taken out; but, in consequence of something having got wrong in the works at the top, which required repairs, the men could not be drawn up for some time. During the delay thus occasioned, the boys employed in the pit went into the old shaft, lighted a fire, and left it burning. In their absence, it communicated with some wood frame-work, and soon spread to the surrounding coal, thus acquiring an ascendancy that has baffled all endeavours to overcome it; its appearance is described as that of a furnace; unfortunately, a supply of water is obtained with difficulty, 40 men being employed to hand it to each other before it reaches the pit. Happily, the accident has been unaccompanied with loss of life; but we understand that three men narrowly escaped suffocation on the discovery of the fire.—*Carlisle Patriot.*

**Lansanet.**—As the two sons of Mr. J. Bryant were returning home on horseback from the Six Pit level, the animal took fright, and ran away—the eldest, unfortunately, had his leg broken.

**Princes End Colliery, Bolton.**—S. Pool, aged 10 years, was killed by an explosion of gunpowder.

**East Ranslet.**—Thomas Dods fell out of the bucket down the Hazard shaft, and was drowned in the sump.

**Maeestey—Dreadful Accident at the Garth Works.**—Scarcely had the sensation arising from the melancholy death of Mr. Lewis Roberts subsided, when it was reported that another serious coal-pit accident had taken place at the Garth Works. From inquiries instituted on the spot, it would appear that, on Thursday last, while Mr. Stanton, engineer and fitter-up to the company, was engaged, together with a young man, named John Watts, carpenter, in adjusting some portion of the machinery connected with the engine of the new pit, which is 60 or 70 yards deep, they deemed it necessary to descend with the carriage used in raising the coal to the surface. The machinery having been in active operation for three weeks without the slightest accident, not the least apprehension was entertained by Mr. Stanton. When the carriage had proceeded a few feet only from the top, two or three slight vibrations were felt, and, judging from this circumstance that some part of the machinery had given way, Mr. Stanton, with considerable presence of mind, proposed that they should lie prostrate on the carriage, which was done; and to this circumstance the preservation of their lives is attributed. It turned out that two of the cog-wheels of the engine were broken. All control over the machinery was at once lost, and the carriage went down with a rapidity truly awful. The engine-man, and those engaged with him, being thus deprived of the means of descending the pit, they ran to the mouth of the level communicating with it, for the purpose of rendering assistance. Both Mr. Stanton, and his unfortunate companion, were found in a state of partial insensibility, and dreadfully bruised in different parts of their bodies, and covered with blood. They were conveyed with as little delay as possible to their respective homes, when Mr. John Pritchard, surgeon, attended with his accustomed promptitude. Under that gentleman's skilful treatment, the patients will, probably, very shortly recover.—*Seamless Herald.*

**Awful Boiler Explosion.**—On Tuesday last, a most serious explosion of a large steam-engine boiler occurred at the foundry and machine manufactory of Messrs. Beacock and Tannett, at Leeds, who have only been in possession about four months, previous to which it had been unoccupied for a long time. There were in the engine-house two large wagon-shaped boilers, and so terrific and powerful was the explosion of one, that it completely threw the other from its seat, turning it over on its side; the upper half of the exploding boiler was torn from the lower part, carrying away the roof of the building, knocking down two high walls, and, after demolishing another roof, fell 30 yards from its first position. The engine-man, named Newton, was killed on the spot, and a girl also, named Harrison, who was passing the premises; three others were dreadfully injured, and taken to the infirmary. A long investigation was gone into, on Wednesday last, before the coroner, at the Commercial Inn, Leeds, the jury having previously inspected the boiler and ruins very minutely. Mr. R. Beacock, one of the partners, and several mechanics working on the premises, and engineers in the town, were examined, whose evidence went to show that the valves and boiler-feeders were out of condition; but the principal was that of William Longbottom, engineer, in the employment of Messrs. Marshall and Co. for 20 years, who deposed—I have examined the premises and the boiler, and my decided opinion is, that shortness of water, and no other cause, was the origin of the explosion. Upon examining the lower part of the boiler, I found it encrusted with oxide of iron, caused by excessive heat—so excessive, as no boiler ought to be exposed to. I do not think this explosion could have been caused by the overweighting of the valve. I have calculated, from the properties of iron, that it would have required a force of 800 tons to produce the effects which have been produced in this instance, supposing the plates to have been perfect; and 400 tons, if you make every allowance for rivets—a force which no overweight could produce. In this instance, some of the boiler-plates are torn in two. No doubt some part of the feeding apparatus had been deranged, and hence the deficiency of water in the boiler, and the explosion. Nine pounds to the square inch would be safe at their speed; the Messrs. Marshall worked 8 lbs. George Lodge, another engineer, after an examination of the boiler, was also of opinion that the primary cause of the explosion was shortness of water; the secondary cause was the overweighting of the safety-valves, on their becoming fast. The jury, after an inquiry of five hours, returned the following verdict:—"Accidental death; and that the explosion of the boiler arose from a deficient supply of water; and the jury recommend, that in future the boiler should be fed by a common feed-pipe, and not by a force-pump." Mr. Beacock said this should be attended to.

**THE MINERS' MODE OF PUNISHMENT.**—On Saturday morning last, a mode of punishment not altogether unknown in this country, occurred in the public streets of this town. The delinquent in this case had committed an act of dishonesty by claiming the production of another man's labour. The offender and the offended were working together in one of the Earl of Lonsdale's coal-pits, near this town, and the delinquent, in the course of the morning, when unobserved, had labelled with his own tally-stick a basket of coals which had been haggled by one of his fellow-labourers, with the view of receiving pay for them as the productions of his own labour, thereby intending to defraud his fellow-workman of what was justly due to him. The trick, however, was discovered, and the offender was seized and had his arms pinioned with cord behind his back, to which a dark-coloured board, about 2 feet square, was fixed, and the nature of the offence set forth upon it with chalk, written in a large and good legible hand. In this pitiful condition the fellow was driven through the town by the person whom he had attempted to defraud, followed by a crowd of men, women, and children, who every now and then loudly cheered the procession, which rapidly increased in numbers as it passed along. The offender, who proceeded through the streets in front of the crowd, seemed much at his ease, and apparently cared as little for the punishment as he thought about the penalty, which ought to have followed the discovery of his offence; but which, in our opinion, the mode of inflicting the chastisement was but little calculated to inspire.—*Whitworth Herald.*

**THE LIVERPOOL RAILWAY DIVERTMENT.**—The deputation from the Liverpool Stock Exchange, that visited London, a fortnight ago, on an interview with the directors of the leading railway companies, to ascertain whether, in the present embarrassed state of the commercial world, some plan might not be devised for lightening the pressure of calls, and suspending the progress of works not essentially requisite, have not considered it necessary to report formally the result of their visitation to the various companies—the account that appeared in the daily journals, and which preceded their return to Liverpool, having been deemed sufficiently full and correct. It is not, moreover, we learn upon authority, their intention to take any further steps in the matter, after the comparatively lukewarm sort of sympathy and reception their representations met with in London. They intend, however, at the earliest practicable opportunity, to have an interview with the Chancellor of the Exchequer, in present, if possible, the injury which, they conceive, will be inflicted on the trading community, by persevering in a drain of calls, or a protracted expenditure on works. In the meantime, it is expected that Liverpool will follow up the movement commenced in Manchester.

#### Current Prices of Stocks, Shares, & Metals.

**MIXES.**—Notwithstanding the continuance of the unprecedented state of the money market has upon all speculative property, there is still a strong and manifest desire with capitalists to purchase mining shares. During the week, there have been many inquiries for shares in standing mines, although the amount of business really transacted has not been large—the general impression being, that sellers will refuse to offer, however depreciating; but, even with the present scarcity of money, it is only where necessity urges that these sacrifices are made; and it is a remarkable fact, that the mining share market has, comparatively, but little suffered—whilst the railway shares have remained dormant, or sold at ruinous prices.

Treleigh meeting, held on Wednesday, declared a dividend of 6s. per 5000th share—being the third dividend since May—reserving a balance of 1500l. in hand, exclusive of a reserve fund of 450l.

The highly prosperous position of Bedford United Mines has produced a demand for these shares; but purchasers are unwilling to advance above our present quotations.

Great Devon Consols shares have been in request during the week; sell we are not advised of any sales having been effected.

We understand that an improvement has taken place in Coatlithe Hills Lead Mine, and that some shares have changed hands at an advance.

Buyers may be found for Wheal Henry, in consequence of a considerable improvement having been made there; as well as in South Wheal Francis, West Seton, Caradon Wheal Hooper, &c.

A considerable improvement has taken place in Great Wheal Mitchell Consols, which will, no doubt, create a demand for these shares, especially as the present quotation is far below their estimated value.

The report from West Wheal Maria represents a decided improvement having taken place, and some few shares have changed hands; but whether from the improved state of the mine, or the lowness of the shares, we are not prepared to show.

Several shares in Comblawn Mine, near Callington, have been done.

The following shares have been transferred this week—viz.: Trehanes, Herodsfoot, West Wheal Maria, Pilsaith, Mendip Hills, Treviskey and Barrier, Wheal Henry, Plymouth Wheal Yeoland, Bedford United, Caradon Wheal Hooper, Stray Park, Devon and Courtenay, Condurrow, and Comblawn.

In foreign mines, transactions have been of the most limited character; if we except Imperial Brazilians and Australians, we fear very little else has been done. Since our last, we learn that private advices have been received from the Australian mines, of a most encouraging character; and a large number of shares have changed hands, in consequence.

By the dispatches received yesterday from the Imperial Brazilian Company's Mines, dated 28th July, we learn that their most sanguine expectations will be realised at their newly-acquired property, Bananal, as will appear by the report furnished in another column.

The Alten Mines report, also, presents an improvement, especially in the quality of the ore, and some discovery of other lodes.

**RAILWAYS.**—In the early part of the week the market was in so depressed a state, that although pressed to the utmost urgency to realise, holders could not effect sales; on Wednesday, it appeared in a little better state, though still shares, except in some very few cases, did not advance in prices. The shares most liked by small speculators appeared to receive the most support. On Thursday, some little more firmness was visible; but there was a further evident depression yesterday, and the market closed very flat.

**MEETINGS.**—A meeting of railway shareholders took place, at the London Tavern, to consider the propriety of petitioning Parliament to extend the time granted for the completion of such railways as were passed during the session of 1846 and 1847, and other business, when resolutions were passed to the effect, that a petition be drawn up to show the difficulty position in which shareholders are placed by their engagements in railways, both as regards the deposits and calls already paid, and their further liabilities, and appointing a committee to carry out the objects of the meeting, consisting of Mr. Henderson, Glasgow, and Glasgow, and Mr. Green, New and East London; extraordinary; the number of directors were reduced from 13 to 8; and it was decided to suspend the works until next spring.

**HULL, THURSDAY.**—The share market has been, throughout the week, in a state of paralysis; and, although quotations this morning show a slight change for the better, there is nothing to justify the expectation of a speedy and considerable improvement—especially while the talented Chancellor of the Exchequer is of opinion things are "all right," and that there is no necessity for a relaxation of Sir H. Peel's perfect bill of 1844. Six per cent. preference shares are now at a discount—offering a rare chance to those who are clear of railway stock, or who hold a slight amount of such property. We are perfectly certain, that many parties will look back to the present time as a period when they missed excellent opportunities for investment; but whether we have seen the worst yet, is, of course, a problem difficult of solution. Local stocks more brought to market. Flax and Cotton Mill new shares are offered at 6l. pm.; Hull banks at 1l. per share; Glass shares may be called 6l. to 7l. dis.; and Kingston Cottons 50l. dis.—the latter rather firm at that price.

**EXPORTATION OF THE PRECIOUS METALS.**—The following are the official return of the exports of gold and silver from the port of London for the last week:—Silver coin to Belgium..... 5,000 ounces.

#### RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rwy.	Present actual cost.	Price per share.	Last Div.	Traffic Returns. 1847.	1846.
Arbroath and Forfar.....	15	£179,989	29	3 p.c.	£222	£195
Chesham and Birkhead.....	13	688,293	39	—	796	812
Dublin and Drogheda.....	35	689,248	53	2 1/2	923	805
Dublin and Kingstown.....	7 1/2	472,282	—	9	1174	1281
Dundee, Perth, and Aberdeen.....	47	285,745	35	6	—	416
East Lancashire.....	20 1/2	2,307,490	14	—	1045	462
Eastern Counties.....	236	6,515,026	16 1/2	7	13448	10035
Eastern Union.....	44	531,021	60	—	1290	430
Glasgow and Glasgow.....	48	2,275,435	49	6	4126	4207
Glasgow, Paisley, and Ayr.....	60 1/2	1,567,281	121	7	2909	2462
Glasgow, Paisley, & Greenock.....	23	835,918	18 1/2	2	1206	1058
Gr. Southern & Western, Ireland.....	110 1/2	1,342,718	25	—	2138	882
Great Western.....	241	9,714,939	59	8	23284	20486
Kendal and Windermere.....	10 1/2	147,001	24 1/2	—	197	—
Lancaster and Carlisle.....	70	1,209,913	34	—	1633	—
Lancashire and Yorkshire.....	93 1/2	6,807,314	82	—	10564	10564
London and North Western.....	38 1/2	18,043,004	150 1/2	10	46712	43593
London and Blackwall.....	4	1,102,717	54	1 1/2	1019	1077
London, Brighton, & South Coast.....	137 1/2	5,109,667	41 1/2	7	11665	10698
London and South Western.....	186 1/2	5,826,132	57	9	10212	7747
Londonderry and Enniskillen.....	14 1/2	—	24 1/2	—	120	—
Manchester & Leeds.....	147 1/2	5,036,391	96	5 1/2	7441	—
Manchester, Sheffield, & Lincolnshire.....	49 1/2	1,678,108	89	5	2650	1970
Marquess and Carlisle.....	38	414,885	—	—	628	561
Midland Company.....	38 1/2	7,892,274	108 1/2	7	25823	21226
Newcastle and Carlisle.....	65	1,184,080	118	5	3446	2209
Norfolk.....	70 1/2	1,196,669	90	7	2046	1601
North British.....	78	1,459,958	25	—	2724	1347
Shrewsbury and Chester.....	17	591,189	21 1/2	—	683	—
South Devon.....	29	1,061,383	38	8	1103	447
South-Eastern.....	187 1/2	5,888,411	29 1/2	8 1/2	13050	11033
Valley.....	38	888,411	—	6	1724	1386
Whitehaven Junction.....	12	91,274	—	—	220	—
York, Newcastle, & Berwick.....	236 1/2	3,683,102	81 1/2	9	12040	7770
York and North Midland.....	196	3,484,356	71 1/2	10	10202	7647

#### FOREIGN RAILWAYS.

Amiens to Abbeville.....	28	578,338	—	4	784	—
Dutch Rhine.....	57 1/2	—	24	—	1139	1086
Northern of France.....	203 1/2	2,000,000	192	4	15827	5996
Orleans to Tours.....	73	600,000	—	4	3787	3097
Paris and Orleans.....	62	3,011,720	44	13 1/2	9212	8381
Paris and Rouen.....	85	2,082,916	34 1/2	8 1/2	8596	8166
Rouen and Havre.....	55 1/2	—	30 1/2	4	3322	—
Strasbourg and Basle (monthly).....	68	—	8	1 1/2	9863	10612

Total earnings for last week, £202,390, being an increase of £29,314 over last year.

#### COAL MARKET, LONDON.

**PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.**  
**MONDAY.**—Adair's Main 16 6—Dundee's West Hartley 16 6—Burnhouse Hartley 16—Davison's West Hartley 16 6—Original Tanfield 16 6—Ord's Redbush 16 6—Tanfield Moor 16—Townley 17—West Wylam 17 9—Wylam 17 9—Wall's End Acorn Close 18—Berwick and Co. 18 3—Bell and Brown 18 3—Gosforth 18 3—Northumberland 17 6—Wharfedale 18 3—Eden Main 20 2—Bradley's Hetton 20 6—Crawford's 17 6—East Hetton 18 3—Harwell 20 9—Hetton 20 9—Keepler 20 6—Lambton 20 6—Morton 20 6—Russell's Hetton 20 6—Shotton 20 6—Stewart's 20 6—Washington 18—Whitwell 18 6 to 18 9—Hudson's Hartlepool 19 6—High Thorney 19 6—Edith 20 3—South Durham 18 6—Seymour Toss 19 3—Toss 20 6—West Cornforth 18 9—Whitworth 16 6—Derwentwater Hartley 16—Howard's West Hartley 16—Howard's West Hartley 16—Siddons's Hartley 16 6.—Ships at market, 102; sold, 74; unsold, 29.



## LATEST CURRENT PRICES OF METALS.

LONDON, OCTOBER 6, 1847.

Item	Price	Item	Price
Iron—Bar, 12 ft. long, 1 1/2 in. square	0 12 6	Copper—Ord. bottoms	0 0 0
Do. 10 ft. long, 1 1/2 in. square	0 10 0	Yellow Metal—Sheeting	0 0 0
Do. 8 ft. long, 1 1/2 in. square	0 8 0	Do. Com. blocks	0 0 0
Do. 6 ft. long, 1 1/2 in. square	0 6 0	Do. Bars	0 0 0
Do. 4 ft. long, 1 1/2 in. square	0 4 0	Do. Sheet	0 0 0
Do. 3 ft. long, 1 1/2 in. square	0 3 0	Do. Bars	0 0 0
Do. 2 ft. long, 1 1/2 in. square	0 2 0	Do. Sheet	0 0 0
Do. 1 ft. long, 1 1/2 in. square	0 1 0	Do. Bars	0 0 0
Do. 1/2 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/8 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/16 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/32 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/64 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/128 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/256 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/512 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1024 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2048 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4096 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/8192 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/16384 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/32768 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/65536 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/131072 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/262144 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/524288 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1048576 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2097152 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4194304 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/8388608 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/16777216 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/33554432 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/67108864 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/134217728 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/268435456 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/536870912 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1073741824 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2147483648 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4294967296 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/8589934592 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/17179869184 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/34359738368 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/68719476736 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/137438953472 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/274877906944 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/549755813888 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1099511627776 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2199023255552 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4398046511104 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/8796093022208 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/17592186044416 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/35184372088832 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/70368744177664 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/140737488355328 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/281474976710656 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/562949953421312 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1125899906842624 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2251799813685248 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4503599627370496 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/9007199254740992 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/18014398509481984 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/36028797018963968 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/72057594037927936 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/144115188075855872 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/288230376151711744 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/576460752303423488 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1152921504606846976 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2305843009213693952 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4611686018427387904 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/9223372036854775808 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/18446744073709551616 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/36893488147419103232 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/73786976294838206464 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/147573952593676412928 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/295147905187352825856 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/590295810374705651712 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1180591620749411303424 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2361183241498822606848 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4722366482997645213696 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/9444732965995290427392 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/18889465931990580854784 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/37778931863981161709568 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/75557863727962323419136 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/151115727455924646838272 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/302231454911849293676544 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/604462909823698587353088 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1208925819647397174706176 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2417851639294794349412352 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4835703278589588698824704 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/9671406557179177397649408 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/19342813114358354795298816 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/38685626228716709590597632 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/77371252457433419181195264 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/154742504914866838362390528 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/309485009829733676724781056 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/618970019659467353449562112 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1237940039318934706899124224 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2475880078637869413798248448 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/4951760157275738827596496896 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/9903520314551477655192993792 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/19807040629102955302385987584 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/39614081258205910604771975168 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/79228162516411821209543950336 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/158456325032823642419087900672 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/316912650065647284838175801344 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/633825300131294569676351602688 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1267650600262589139352703205376 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2535301200525178278705406410752 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/5070602401050356557410812821504 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/10141204802100713114821625643008 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/20282409604201426229643251286016 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/40564819208402852459286502572032 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/81129638416805704918573005144064 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/162259276833611409371460102888128 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/324518553667222818742920205776256 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/649037107334445637485840411552512 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1298074214668891274971680823105024 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2596148429337782549943361646210048 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/5192296858675565099886723292420096 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/10384593717351130199773446584840192 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/20769187434702260399546891769680384 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/41538374869404520799093783539360768 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/83076749738809041598187567078721536 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/166153499477618083196375134157443072 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/332306998955236166392750268314886144 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/664613997910472332785500536629772288 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/1329227995820944665571001073259544576 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2658455991641889331142002146519089152 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/5316911983283778662284004293038178304 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/1063382396656755732456800858607636608 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/2126764793313511464913601717215273216 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/4253529586627022929827203434430546432 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/8507059173254045859654406868861092864 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/17014118346508091719308813737722185728 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/34028236693016183438617627475444371456 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/68056473386032366877235254950888742912 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/136112946772064733754470509901777485824 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/2722258935441294675089410198035549716608 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/5444517870882589350178820396071099433216 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/10889035741765178700357640792142198866432 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/21778071483530357400715281584284397732864 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/43556142967060714801430563168568795465728 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/87112285934121429602861126337137590931456 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/17422457186824285920572225267427518182304 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/34844914373648571841144450534855036364608 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/69689828747297143682288901069710072729216 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/139379657494594287364577802139420145458432 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/278759314989188574729155604278840290916864 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/557518629978377149458311208557680581833728 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/1115037259956754299116622417115361163667456 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/2230074519913508598233244834230722327334912 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/4460149039827017196466489668461444654669824 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0
Do. 1/8920298079654034392932979336922889309339648 ft. long, 1 1/2 in. square	0 0 0	Do. Bars	0 0 0
Do. 1/17840596159308068758865958673845778618679296 ft. long, 1 1/2 in. square	0 0 0	Do. Sheet	0 0 0



## NOTICES TO CORRESPONDENTS.

It will at all times save much trouble, and frequently considerable delay, if communications are simply directed—  
To the Editors,  
Mining Journal Office,  
25, Fleet-street, London.

Also, to avoid trouble, Post-Office Orders should always be made payable to WILLIAM SALMON MANSFIELD, as acting for the proprietors.

M. Paillette (Paris).—Forwarded, through the London agents, to the Quebec and Montreal Mining Company.

"A Friend to the Adventurers in Town." must authenticate his statement respecting the Dean Prior and Buckfastleigh Mines, when it will receive proper attention. If the writer in what his signature represents, there can be no necessity for withholding his name—without which, his letter, of course, cannot be taken in preference to the weekly reports from the agents.

CORRESPONDENT.—Mr. Napier's recent improvements are described in the Journal for Sept. 25.—Mr. Wall's method has been referred to on several occasions, and is now in course of practical testing—full particulars of which we shall, of course, place before our readers as soon as they can possibly be made public.

We are indebted to our contemporary, the *Pennant Journal*, for proof sheets of a very extended notice of the annual meeting of the Royal Geological Society of Cornwall.

The *MINING JOURNAL* is published at about Eleven o'clock on Saturday morning, at the office, 25, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

## THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, OCTOBER 9, 1847.

We have looked forward with much expectation, but with no anxiety whatever, to the quarterly winding up of the public accounts. Time out of mind they have been received as the true indices of the internal comfort and prosperity of the kingdom—as such we accept them, and think they give a satisfactory refutation to the opinions, so confidently and so variously set forth, of prevailing embarrassment and distress. It would be a new phase in the fluctuations of our public history that, at one and the same time, the public revenue shall flourish, and the people faint: these, we apprehend, are things so dissimilar, and so distant, that no force of circumstances can make them co-ordinate, or coeval. These quarterly returns show, to a demonstration, that throughout this land of looms and anvils, every man has been up and at his work, and that the prosperity of the Government is a light reflected from the greater prosperity of the people. True, we have had great commercial failures—true, that we may expect more. The tail of the great Irish storm is still shaking its plagues upon us; but the productive industry of the nation, apart from, and in despite of, that visitation, has rarely, if ever, been surpassed, in the results exhibited by the revenue tables now before us. It will not surprise our readers, if we assure them that we think the commercial element all the sounder and the safer, for the failures which have taken place—just as we should think a pile of wheat of more value and solidity when it had received the winnowing of the husbandman's fan. The houses in question have, as some affirm, been long insolvent, and it was in the nature of things that a moderate gale only should have laid them under water. But so, or not, the fact, one way or the other, is not to our purpose, except as it may be admonitory to those who give an undue importance to such points: they will view the case erroneously, and be in danger of treating it empirically, if they consider our case as at all embodied in these events. Our case consists, not in the failures of last month, but in the unexpected and unparalleled outlay of last autumn; and until, by persevering industry, we have won back that expenditure, there will continue to be a pressure.

There is not a more promising method within our reach of restoring the circumstances of the country, than by giving attention and encouragement to our domestic industry: that is the true *via* of the people—the area in which money is to be made. Amongst these branches of industry, prominently, if not chiefly, we may justly enumerate our engagements in railway and mining undertakings. We expect that those having the management of such public works will make their calls on the purse of the country as seldom and as light as possible—that they will not give unnecessary stringency to their legal claims on the shareholders; but, at all events, the work they are engaged in should be prosecuted with all requisite efficiency and vigour, no less with a view to the utility of the works themselves, than in consideration of the employment and comfort of the classes benefited thereby, and, as proved by the returns, which is the text of these few remarks, for the sustentation and enrichment of the imperial treasury.

For years has the public voice been raised against the apathy shown by the large majority of persons, who, as proprietors, or viewers and managers, of coal mines, are, in a great measure, responsible for the lives and health of hundreds of their fellow-creatures, who, from circumstances, are obliged to obtain support for themselves and families by that most rigorous and dangerous of all human employments—mining for coal. Buried the greater portion of their lives hundreds of yards beneath the surface of the earth, and cut off from every other class of their fellow-men, as a body they have naturally imbibed superstitions and prejudices, and a dogged tenacity of habit, in following the old routine of their fathers, that (as we have on so many occasions before observed) renders it futile to expect any assistance from the working collier himself in the improvements so desirable in mine ventilation, until education shall have expanded his mind, taught him some of the simplest truths of natural science, and placed him in some degree on a footing with his brother labourers on the surface. So much the more is it the duties of their employers, and the Legislature, to look after their safety, and take advantage of every means which experience and science places within their reach, to avert, or rather prevent, those dreadful wholesale masses of slaughter, with accounts of which our pages have, unhappily, so often been stained. It is true inquiries have been instituted, commissions appointed, and huge tomes of Parliamentary reports sent forth to the world; but nothing effectual—and little even to the purpose—has been done; and the working collier has been left to take his chance of living, or meeting with a sudden and horrible death, as it might happen.

From what took place, however, at the Liverpool Royal Polytechnic Institution, on Monday week—a report of which appears in another column of this day's Journal—we are most happy to observe, that a step has been taken in the right direction. The paper read by Mr. SWEETLOVE gives, perhaps, as clear as—if not a more lucid—description of the modes of working coal, so difficult to understand by the uninitiated, than is generally given at such institutions; and the discussion which ensued, was equally interesting—both of which, we trust, will make some impression in the right quarters. It is evident, that a powerful disinclination to change exists, both among men and owners—the former, doubtless, from strongly-impressed habits; the latter, probably, to avoid expense—for, although several systems of ventilation have, in the last 40 years, been proposed by scientific men, practically acquainted with coal mining, and which have had evident marks of great superiority over existing methods, they have been rejected without trial, and, one by one, have sunk into oblivion. Mr. SWEETLOVE appears to have taken a decidedly novel view of the principles of ventilation, and which we think is worthy of serious consideration by all parties concerned—and that is, "first the removal of this dangerous gas before its admixture of atmospheric air in the mine; and, secondly, to keep up a constant supply of fresh air for the respiration of the miners. These objects can only be effected separately; we may, therefore, ascribe the failure of the present modes of ventilation to their attempting to effect them conjointly."

The paper throughout is of the most important character, and

appears to us to have given new and interesting features to the subject; and from the popular character of the institution from which it has emanated, and the support given to it by the most influential and scientific men in that populous and wealthy borough, and the surrounding counties, we heartily trust the day is now not far distant—if it has not already arrived—when any plan for the amelioration of the state of our fellow-men, if evidently founded on correct and scientific principles, will, at least, find opportunities of fair trial, and, if found successful, be allowed to make its way, in spite of the opposition of ignorance, superstition, bigotry, or cupidity.

It is the true characteristic of JOHN BULL to live in extremes. He either cannot, or will not, hit the "happy medium," or believe there is *in medio tutissimam ibis*. To-day, rushing with maddened enthusiasm into speculations, however ridiculous—to-morrow, gloomy and disheartened, he will sacrifice, at any loss, that which previously he so eagerly desired. It is especially thus at the present moment. Railway speculations, excessive over-trading, and a system of fictitious credit (enabling men of straw for a time to assume the airs of men of capital), have brought about a panic, the effects of which may be long felt in the commercial world; but which, like the thunder-storm that clears the air of blight and vermin, will, ere long, bring about a better state of things, and a better system of trade. We have been led into these remarks principally from the sacrifices that have been lately made in mining shares, from no legitimate cause whatever that we can learn. Every one, indeed, says, "things must be worse"—"shares must go lower"—and, acting upon this belief, they force their shares upon the market, and create the very depression they predict. We are not advocates for the apathetic indifference of a Nemo, but we do think that ancient and celebrated individual was better employed in fiddling whilst Rome was burning, than he would have been in fanning the blaze. We see no reason why shares should be sacrificed: the only thing we see is, that those who have money in their pockets, and lay it out at present prices, will have every reason to congratulate themselves upon their purchases; whilst those alarmists who sell, will regret it when too late. In less than a week upwards of six millions of money will be paid (in dividends on Consols, &c.) to the public; and this, added to the increased confidence that will arise in the market, will make things better, and our mining friends will do well to remain quiescent for a time. We believe, at the present moment, whilst ruin is encompassing many, and distrust and want of confidence exist to a degree hitherto unparalleled, there is no want of money, and that the bankers have more than they know what to do with, in safety; but which, when confidence is restored, will be circulated as of old.

The advices from South Australia, to the 5th of May last, give most cheering accounts of the state and prospects of that colony—agriculture was thriving, stocks increasing, money plentiful, and trade and commerce flourishing; while the shipping in port were loading large quantities of copper and lead ores, the produce of the very prolific mines of that colony. In another column will be found a report of the second annual general meeting of the SOUTH AUSTRALIAN MINING COMPANY, held at Adelaide, in May last, which exemplifies the extraordinary progress of mining in a high degree—a dividend of 50 per cent. on the capital being resolved on, and a still larger one expected at the next meeting. The banks also have reaped some of the advantages, in consequence of the general prosperity produced by the success of the Burra Burra Mines—having received, during the two years of its working, 2600*l.* for interest and discount. The Australian Colonies jointly are likely to prove of the utmost value and importance, as an adjunct to the British Empire.

We would again draw the attention of our readers to the present position of the GREAT WHEEL MARINA MINING COMPANY. At the special meeting on Wednesday, it transpired that, out of the 2000 shares of 3*l.* 10*s.* each, payable by instalments of 10*s.*, being the amount of capital of which the new company is proposed to consist, about 1300 were taken—leaving 700 still unapplied for. We understand, there are about 80 present adventurers; and if these would but put their shoulders to the wheel, and take an average of 25 shares each, the whole plan would be full, and without pressing on any one, as the periodical calls would be but 10*s.* per share. Now, we consider it would be a very great pity if this mine should be stopped, because the new share list could not be filled up in the usual reasonable time. Owing to the present unfortunate state of the money market, capitalists feel somewhat disinclined to embark in anything, however fair or favourable its prospects may appear; but, in this case, we would remind them of a few particulars, which tend to make the present opportunity for investment one of no ordinary nature. Besides the opinions of the agents of the company, several of the most experienced and practical miners have lately been employed to report on the mine, and in our last week's Journal appeared an extract from a private letter, written by one, whose name, if we were at liberty to mention it, would render any further comments on our part unnecessary. The unanimous opinion of all these gentlemen is, that at 30 or 40 fms. deeper in the New Mine (now at 40 fms.), the lode will be found to be of a very favourable character, and, in fact, that a good and lasting mine will be obtained. Nor is this all: for it is believed that the celebrated Wheel Marina lode exists in the Wheel Martha, and, indeed, we have heard that one of the underground agents at the former mine has expressed himself to that effect. We doubt not, that the present adventurers, especially the holders of preference shares, will avail themselves of the opportunity of carrying on the workings to what is very fairly considered will be a satisfactory result; and that they, as well as new parties, will come forward to save, as far as they are able, the great sacrifice which must otherwise take place. We need only add, that as soon as all the shares are taken, we understand the directors intend sinking the new engine-shaft to the depth to which they are advised, before again driving any levels.

With much pleasure we refer our readers to the reports published this day on the workings and prospects of the PENNANT MINES. We feel double pleasure—first, because the success of a mining speculation always animates us with the same description of delight, which an old sportsman may be conceived to experience, when, after a day's toil, he is crowned with a "view hallo"—happy in success; for we feel prosperity in a mine to be like a personal matter of our own; and next, we have always felt, from the geological structure of that part of Merionethshire, notwithstanding the prejudices which formerly existed against it, that it is in reality eminently rich in mineral productions; and the indications of wealth, which we have long since discerned, are, we may say, now proved by these reports.

In addition to the accurate and highly-satisfactory description of the mining operations, Mr. RICHARDSON'S report is most interesting in the detail of the simple mode he recommends for the preparation of the amber and Vandyke brown, of which there is so abundant a yield on the sett, and which are such valuable commodities—in fact, they appear more than sufficient to pay all expenses of working the mines. His suggestion, as to the preparation of sulphuric acid from the iron pyrites, also points out a source of large profit, and which there is no doubt can be most advantageously realised by means of the "pent," if prepared by Mr. JAMES ROBERTS'S simple and effective process, to which we have frequently alluded; and the mining property at Pennant, and in its neighbourhood, will be made valuable to an extent difficult to estimate by the addition of such a fuel.

The slate beds of Pennant strike us, from the description, to be the same quality as those of Valencia, in Ireland, which have been so much sought after, but which do not yield a sufficient supply for the demand. Here is another source of wealth; for, if things are as we anticipate, thousands and thousands of tons can be disposed of, and we would suggest the propriety of immediate steps being taken to bring samples to market. The report from the purchaser speaks so fully and satisfactorily for itself, that further observation from us is not necessary; but we think the shareholders may be safely congratulated on the brilliant prospects before them. Mining is said by some to be a lottery; if so—which we deny on principle—it is no trifling pleasure to be holder of a prize like this.

Up to this date, the history of the Great Britain steam-ship has been one of rather singular vicissitude: a prisoner in the Severn, immediately after being launched on that element, of which she was so magnificent an ornament; her weatherly encounter with, and conquest of, the heaviest gales of the Atlantic; her stranding in the night within a few fathoms of the shelving rocks, which would have stove in her iron ribs, had she touched their upheaved and massive points; her fine conduct, and firm bearing, during her long and exposed winter quarters in Dundrum Bay; her release from that dangerous captivity, and return through the Irish Sea; the meek manner in which she took her place on the Liverpool grid-iron—together with her vast proportions, and great steam-power, make up a catalogue of singularities, not to be equalled throughout the navies of the known world. This Samson of the steamers—this Goliath amongst the sea giants—is now at the mercy of a auctioneer's little hammer—"To what base uses may we not return, HORATIO." We do not much complain of that—our sole anxiety is, that, in the mere chances of an auction-room, this noble vessel should not pass out of British hands. We think it likely she will not; for there are, perhaps, no seamen, except the indigenous breed of these shores, who have nerve enough, in all states of weather, to handle such a craft. We trust to see her, therefore, with our own flag floating at the mast-head, taking her place among the princes of the sea, and, if possible, making herself the lauded medium of communication between the Old World and the New.

SHIPMENT OF LEAD (?) ONE FROM SOUTH AUSTRALIA.—We learn, from the South Australian papers, that some most barefaced frauds have been discovered to have been going on at the Glen Osmond Mine, the property of Mr. Lewis Gilles. It appears, that in the month of April last, an auctioneer, of the name of Neales, sold at the auction mart, in Adelaide, 4 tons of lead ore, as it was termed, at 3*s.* 6*d.* per ton, the buyer to pay the wharf dues, 3*s.* 6*d.* per ton more—making 7*s.* A Mr. Levi bought it for ballast, but found it a dear bargain even for that, and was glad to get 20*s.* back for it from a gentleman to lay on his garden walks—in fact, it was nothing but stones and rubbish. It came from the mine under the name of "small," and was, consequently, enclosed in bags, with something like ore at top, and this disgraceful practice had been carried on for a length of time, evidently with the connivance of the proprietor, who, in February, 1846, wrote to his brother in London, thus:—"The stones and dirt bagged and returned will, probably, seriously interfere with your arrangements (the formation of the present company in England) which are already made public through a local print."—The *Adelaide Observer* very justly remarks on these disgraceful transactions:—"Were these shipments (so unhappy for the good name of the colony) made with the privacy of Mr. Gilles's accredited agent, and, if not, where was his duty? Or, is it admitted that in these cases there was no supervision at all? But, on whomsoever the blame rests, it is quite clear that so many bags could not have so found their way to the port, without connivance on the part of some one, which even the modified law of libel would scarcely allow us to characterise with sufficient severity; for, in all affairs like this, the mischief does not end with the parties concerned on this side the water, but travels 16,000 miles, spreads into numberless ramifications in England, and then recoils upon its victims here; and, not only upon them, but the colonies at large, with accumulated inflictions. In short, the results of such a transaction in commerce are as destructive in their degree as the chain-shot in naval warfare, under the effects of which many a national standard has been doomed to fall; and, for the honour and credit of South Australia, we believe it to be unique in our colonial records of roguery." Mr. L. W. Gilles has denied any knowledge of the transaction, and there is certainly a mystery about the matter which should be cleared up: the above extract from the letter, however, remained unexplained up to 24th April.

OPENING OF THE PRUSSIAN RAILWAYS.—The 15th instant, being the anniversary of the King of Prussia's birth-day, all the railways that can be finished by that time, throughout the Prussian States, will be opened, with due ceremony, on the auspicious occasion. From that date, a railway-communication will be open from Ostend to Cilly, with the exception of a slight interruption of a few miles through the mountains, between Gratz and Vienna. The town of Cilly will then only be 78 miles distant from Trieste. Lieut. Wagner, R.N., whose indefatigable exertions in the establishing of the Overland route to India via Suez, Alexandria, and Suez, have gained him so much renown and gratitude of the great commercial interest of this country, has been specially invited by his Prussian Majesty to be present at this grand national ceremony.—A congress of the directors of the different railways of Germany, Austria, Prussia, Hanover, and Belgium, is to be held, to enable Lieut. Wagner to make further arrangements for the establishing of the Overland route to India via Trieste, as the new line of railways will afford those facilities that he could not obtain during his last experiment, although they far exceeded his expectations.

BENEFITS OF RAILWAYS IN INDIA TO MINING ENTERPRISE.—The establishment of railways throughout our Indian Empire will be the means of throwing open a wide field to native industry of every description, but particularly mining enterprise, which has hitherto been completely stagnant, in consequence of the want of means of a cheap and secure conveyance for their produce to market. The authorities in India, as well as the board at home, have been strongly opposed to the introduction of railways in that vast and rich portion of the British dominions, as they would put down the monopoly which exists by the local Government over nearly every branch of national industry, and the resources offered by the most wealthy country in the world, if unfettered from the iron yoke of power. After a severe struggle, the companies have succeeded; and, ere many years are over, we shall have lines from Bombay and Madras to Calcutta, and through the mineral provinces of the west and north-west, to Bardwan, Mirzapur, Benares, Allahabad, to Kerosopora, on the banks of the Ganges, and the Lahore dominions. The geological features of India consist of primary and granitic rocks, sandstone, argillaceous, and basalt, salt, limestone, and coal to a very great extent, and recent alluvium. Gold, silver, copper, iron, lead, and other metallic ores, are known to exist in various parts, but, as yet, have remained unexplored by the hand of man; the facilities of railways to the working of the mineral resources will cause the energy of the adventurer to develop itself, and open a new, but profitable, branch of industry, and thus give occupation to thousands of the natives. Coal occurs extensively in eight provinces—namely, Teesside, Ayrshire, Orissa (Cuttack), Bengal Proper (Bardwan), Sylhet, Assam, Rajmool, Behar, and Norbudda. In every instance iron ore—either the common clay iron-stone, or red or yellow iron-stones, containing from 30 to 50 per cent. of iron—occurs with the coal, or extensively in the same district. The distance from Calcutta to the first coal mine, on the line of the present Benares road, is 125 miles, and, for 50 miles further, the road passes over the coal field. The coal sent to Calcutta from the present limited company's mines in Bardwan, would, of itself, pay a very handsome dividend upon a line laid down between that and Calcutta, as great difficulties are experienced by the solitary owners from the want of facilities, as they are unable to bring the coal down a direct distance of 75 miles in less than two seasons, by the circuitous route of the Damooda river, where the loss is very great every year in the transit from the sinking of boats, and other incidents. The rate of five rupees per ton would willingly be paid by the companies for the transport of the coals from the mines to Calcutta. At present, in favourable seasons, the quantity taken down the Damooda to the capital, is about 2,000,000 maunds, or 74,064 tons yearly, which, no doubt, would be double if there was a single line of rail, and would put a stop to the existing monopoly, as other companies would set to work. Besides, coal and charcoal can be obtained at the 110th mile-stone, at the rate of 10 to 15 rupees per 100 maunds, and could be delivered at Calcutta, by rail, at the rate of 81 rupees—whilst, at present, it frequently sells as high as 75 rupees per 100 maunds. Wood and timber of every description is plentiful, and may be procured for little more than the expense of cutting. The value of the land is extremely low; and water, for the working of the different engines and mills, is extremely abundant—so that nothing is wanting to carry out mining on an extensive scale but cheap conveyance. The planter and merchant in Central and Upper India—whose goods are now consigned to the dangerous, crazy boats which navigate the rivers, at enormous risk, and uncertainty of their arrival at their destination in a marketable condition—will hail with joy the means of transporting their salt, indigo, and cotton, with the certainty of obtaining the price of the day's market, and the security afforded to the merchandise by the rapidity of the conveyance; and the agriculturist for his corn. To the Government, in the transit of military stores, troops, officers, ammunition, and particularly the mails, from one end of the country to the other, railways are of the greatest importance. A Calcutta merchant, who desires to visit Morarjee, must now incur an expenditure of 70*l.*, and a loss of six weeks, if he avails himself of the steam-vessels; and, if he proceeds by the Dak, the amount will be nearly the same, and the period required to perform the distance there and back, about ten days of most fatiguing travelling: whilst the railway will enable him to perform the whole distance, there and back, in thirty hours, at an expense, if the English rates are adopted, of 11*l.* 6*s.* 7*d.*, and 5*l.* 10*s.* 6*d.*—according to the class train he may select.







## REGISTRATION OF DESIGNS ACTS, &amp; THEIR AMENDMENT.

BY F. W. CAMPBELL.

The laws regulating the proprietorship or copyright in designs, unlike those on patents, are altogether of modern growth, and, in dealing with them, we have not the advantage, as in the former case, of reference to the forensic learning of bygone times, from which to frame an exposition that shall fully develop their merits and defects; but we have to grapple with modern Acts of Parliament, and to fight our way through their dubious ground, unaided by the light of judicial wisdom.

Designs copyright is a further development and ramification of the literary or book copyright—the first enactment respecting which occurs in the year 1710 (statute 8 Anne, c. 19), and was followed, in the reign of George II., by an Act of Parliament, conferring analogous rights and privileges on new engravings and prints (8 Geo. II., c. 38), and has been the subject of successive amendatory enactments. Next in order follows the first Copyright Designs Act, granting an exclusive property, of three months' duration, to the proprietor of any new and original pattern for printing linens, cottons, calicoes, or muslins, to commence from the day of first publishing thereof, which must be truly printed with the name of the printer or proprietor at each end of every such piece of linen (27 Geo. III., c. 38, &c.). Similar enactments were made with regard to sculptures, models, &c. But the proximate commencement of the present system is dated 1839, when "an Act [was passed] to secure to proprietors of designs for articles of manufacture the copyright of such designs for a limited time"—this was intended by the Legislature as a measure of extension of the provisions of former Acts, to all articles of manufacture, but as regards ornamental designs or patterns only: this, however, not being specifically stated in the Act—the wording of which was most comprehensive, and, in many respects, much preferable to those at present existing—many inventors, who, owing to the great cost of suing out letters patent, were unable to obtain protection for their inventions, availed themselves of its provisions by registering their proprietorship therein, in accordance with the wording of the Act and its apparent meaning, though contrary to the original intention of the Legislature. This state of things continued for more than two years; and no other fault could be found with it than that it required the calico-printers' acts to be brought under the same regulations. Some of our sapient legislators, however, thought otherwise, and, although they could not, or would not, reform the patent laws, and render patents accessible to all entitled to them, they thought it right to put an end to this tolerated protection—to carry out which beneficent idea the "Act to consolidate and amend the laws relating to the copyright of designs for ornamental articles of manufacture," which, although a good law, inasmuch as it extended the regulations of the former Act to all designs for articles of manufacture, and removed a load from the Statute Book, by substituting this one Act for the numerous Acts then in operation, still it was very ill conceived, in so far as it restricted these benefits to designs for ornament only—throwing overboard those numerous little contrivances engendered by the advance of civilised life, very useful in their way, but too trivial for the application thereto of the expensive patent system. Indeed, these wise men soon perceived their error, and, to their credit be it stated, were not too proud to own it, and adopt measures for its remedy—that is, they introduced a bill into Parliament, which was passed into an Act, under the title of "An Act to amend the Laws relating to the Copyright of Designs." This extended the operation of the Act above-mentioned to designs for articles of utility, or inventions where the novelty consists in change of shape and configuration. Both these Acts have been subject to exposition by men eminently qualified for the task; yet, owing to such expositions being, in most instances, written in the early infancy of these Acts, they do not convey full and accurate ideas of them, and are, in fact, not so much epitomes, as the expressions of the individual opinions of the writers upon them.

The Act 5 & 6 Vict., c. 100, or, as it is commonly termed, the Ornamental Designs Act, is the first in order of time, and is further of importance, inasmuch as the law regarding designs for articles of utility participates in its main features, as will be seen hereafter. It commences with a recapitulation of the law then in force as to copyright of designs generally, and provides that, from Sept. 1, 1842, the Acts 27 Geo. III., c. 38; 29 Geo. III., c. 19; 34 Geo. III., c. 23; 2 Vict., c. 13; and 2 Vict., c. 17; shall be repealed; but any rights then in force under them to remain intact. It then provides that any new and original design (except for sculpture, and other things of an artistic character within the purview of Acts 38 Geo. III., c. 71, and 54 Geo. III., c. 56), whether applicable to the ornamenting any article of manufacture, or any substance, artificial or natural, or partly so; and that, whether in regard to pattern, shape, or configuration, or ornament, and without respect to the mode of producing such design, if not previously published either in Great Britain and Ireland, or elsewhere, entitles the proprietor thereof (who may be either the author, or any one for whom he may have executed the design for a good or valuable consideration) to the sole right to apply the same, provided it "be done within the United Kingdom of Great Britain and Ireland for the respective terms hereinafter mentioned, to be computed from the time of such design being registered according to this Act—that is, by making application to the registrar in proper form, stating the name of the proprietor, and the number of the class under which it is desired to register the design (or numbers of the classes, if it be desired to register the same under more than one). The classification and terms of copyright are as follow:—1. Articles wholly or chiefly in metal, or mixed metals—term, 3 years. 2. Articles wholly or chiefly in wood—term 3 years. 3. Articles wholly or chiefly in glass—term 3 years. 4. Articles wholly or chiefly in earthenware—term 3 years. 5. Paper-hangings—term 3 years. 6. Carpets (also floor and oil-cloths, Act 6 & 7 Vict. cap. 65)—term 3 years. 7. Shawls, if design be applied solely by printing, or by any other process by which colours are, or may hereafter be, produced upon tissue or textile fabrics—9 calendar months. 8. Shawls not comprised in class 7—3 years. 9. Yarn, thread, or warp, if the design be applied by printing, or by any other process by which colours are, or may hereafter be, produced—9 months. 10. Woven fabrics, composed of linen, cotton, wool, silk, or hair, or of any two or more of such materials, if the design be applied by printing, or by any other process by which colours are, or may hereafter be, produced upon tissue or textile fabrics, excepting the articles included in class 11—9 months. 11. Woven fabrics, composed of linen, cotton, wool, silk, or hair, or of any two or more of such materials, if the design be applied by printing, or by any other process by which colours are, or may hereafter be, produced upon tissue or textile fabrics; such woven fabrics being, or coming within the description technically called furnitures, and the repeat of the design whereof shall be more than 12 inches by 8 inches—3 years. 12. Woven fabrics, not comprised in any preceding class—12 months. 13. Lace, and other articles not comprised in preceding classes—12 months. After registration, each article to which the design is applied must bear the registration mark.

The transfer of property in a design may be effected, under the Act, by the simple process of signing concise transfer forms, or by legal documents—which, being produced to the registrar, accompanied by a copy of the design, he is to transfer the same in the register.

When registered, no other person than the proprietor may, during the term of copyright, apply such design, or any fraudulent imitation thereof, for the purpose of sale, to the ornamenting of any article of manufacture, &c.; nor publish, sell, or expose for sale, any article of manufacture, or any substance, to which such design, or any fraudulent imitation thereof, shall have been so applied, after having received, either verbally, or in writing, or otherwise, from any source other than the proprietor of such design, knowledge that his consent has not been given to such application, or after having been served with, or had left at his premises, a written notice, signed by such proprietor, or his agent, to the same effect. If any party, or parties, commit such act, or acts, then for every such offence he, or they, forfeit a sum not less than 5*l.*, and not exceeding 30*l.* (provided the aggregate amount be not more than 100*l.*), to the proprietor of the design infringed, which may be recovered—in England, either by action of debt, or on the case, or by summary proceeding, before two magistrates, having jurisdiction where the party offending resides; and, to enforce payment of penalty and costs, the magistrates may grant a distress warrant. In Scotland, by action before the Court of Session, in ordinary form; or by summary action, before the sheriff of the county. In Ireland, by action in a superior court of law, at Dublin, or by civil bill, in the Civil Bill Court of the county or place where the offence was committed. Costs may be given to the alleged infringer, if he prevail, at the discretion of the Court.

The registrar may proceed by action for damages, if he should so elect. In case of fraudulent registration, the transfer, or cancellation, of the design, may be effected by a court of equity, upon application, and proof thereof, by rightful owner. The mark denoting a registered design, must not be used upon an article not registered, or of which the registration has

expired, under a penalty not exceeding 5*l.*, recoverable as above. No action, or proceeding, must, however, be brought later than 12 calendar months after commission of offence. To carry the Act into execution, provision is made for a registrar and staff of officers, and his duties enumerated; he, or his deputy, is to give to every registrant a certificate of entry made on the design, or copy, under his hand, and the seal of office, which is *prima facie* evidence, as to validity of the copyright or proprietorship. The inspection of designs whereof the copyright has expired, is allowed to any person paying the proper fee; but, with regard to copyrights still in force, inspection is not allowed to any person other than the proprietor—it being arranged that any person applying to the registrar, and producing the registration mark, may receive his certificate, as to the result of search; but shall not be permitted to search himself. The Act then winds up in the usual manner. These are the most important features of the law of copyright of designs as it now stands. The points of difference, as regards designs for articles of utility—to elucidate which is the main object of the present papers—will be reserved for a future Journal.

Patent-office and Designs Registry, 310, Strand, Oct. 5.

## Original Correspondence.

## SULPHUR-IMPROVEMENTS IN SMELTING.

SIR,—Your correspondent, "Observer," in attributing the formation of the sulphur deposits of Iceland to the decomposition of sulphuretted hydrogen, has given us a solution perfectly agreeable with well-known and long-observed phenomena. The facility with which highly-heated steam separates the sulphur from metallic sulphurets, leaves little doubt but that it is the agent, aided by the intense chemical action going on in the interior of the earth, by which the sulphuretted hydrogen is produced, and which is a gas so exceedingly prone to decomposition, whose elements are held together by such feeble affinity, that simple admixture with the atmosphere is sufficient to destroy their union, and cause a deposition of the sulphur. But I beg, respectfully, to draw "Observer's" attention to the large share of duty sulphureous acid must necessarily perform in bringing about this change—it always forming, as well as sulphuretted hydrogen, one of the products of volcanic action, and a substance which possesses far greater power than atmospheric air in effecting this decomposition; it being impossible for the two gases to remain mixed one instant, without their elements re-arranging themselves according to their affinities—viz.: as sulphur and water. The manner in which the sulphur deposits of Iceland are formed, and of which the same may be said of other places—as Sicily, &c.—affords a beautifully instructive lesson how man, when he is placed at a distance from these localities, and possesses native sulphurets, may, by imitating the operations of nature, derive all the advantages the extensive use of this mineral is so well calculated to confer. I have previously shown the arrangements necessary for this branch of manufacture, and that the amount of fuel required would be trifling, when we consider the low temperature at which the decomposition takes place—a red heat being amply sufficient—while the chilling effect of the steam can be overcome, by heating it as air is heated for the "hot-blast."

In 1820, the consumption of sulphur in Great Britain amounted to only 5000 tons. Through the removal of the enormous duty on salt, Leblanc's process was enabled to come into successful competition with the former plan of incinerating sea-weed; and a wonderful impetus was thereby given to the manufacture of sulphuric acid, which has gone on steadily increasing, until the annual make has reached 60,000 tons. For this quantity, 20,000 tons of sulphur are required. In 1838, the importation of sulphur into this country was 44,000 tons, which was reduced the year following, by the unwise monopoly attempted to be established by the Neapolitan Government, to 22,000 tons, of which only 5400 tons were procured direct from Sicily. Since that period, the importation has not reached half the amount to which it had then attained; and there is reason to believe that it will never again enjoy its former prosperity. We must, henceforth, look to British minerals for our supply of sulphur—to the smelters of copper and iron we must turn for this necessary article. However tardy they may be in adopting a means of arresting the immense quantities that are continually pouring from their works, the time is fast approaching when they will be compelled to seek, as many other manufacturers are, for a considerable part of their profits in their bye products.

Cornhill, Oct. 5.

## DOUBLE-ACTION PUMP.

SIR,—In answer to the inquiry of Mr. W. Bradbury, of Budley-green Colliery, Congleton, in the *Mining Journal* of the 2d September, we beg to state, for his information, and for that of your readers generally, that we have at work two 6-inch double-action pumps, making a lift each way; the water, both above and below the bucket or plunger, flowing through one set of pipes. They work better, and are superior to any we have had in practice before; and, for convenience, power, and economy, a great saving will be found. The pumps were made by the Oak-Farm Company, near Dudley.—JONES AND OAKES: *Kelley's Coal and Iron-Works, near Dudley.* Oct. 1.

## ADCOCK'S SPRAY PUMP.

SIR,—I know not whether it be fact or not, that "facts are public property," but one thing I do know is, that "facts are stubborn things;" and, with all due deference to the defence of the spray pump, by Mr. Reginald T. Blewitt, M.P. for Monmouth, I must decline the reception of his eulogy as a fact; but still retain, as I always have done, but now stronger than ever, the idea that the publication of the *real* relation of power employed to duty performed, or, in other words, how many pounds of water are lifted per minute through a given height (the height of the lift at Llanhiddel), by 84 lbs. of coal, employed in actuating a given volume of air to blow up the said water, will prove as serious an obstacle to successful eulogy of the spray pump, as Mr. Adcock's attempt, at Newton-Wood Iron-Works, to smelt iron ore, by the mere draught of a chimney shaft. What can be more suspicious than that, whilst Mr. Adcock, in his pamphlet, is regaling us with a scientific detail of dynamic units, as elaborate as could be wished, he never so much as hints whether 1 lb. weight of air will carry up his pipe more or less than its own weight of water, nor whether an addition to the usual friction of pumping is not presented in the loss of power due to the high elasticity of air, to flow with a velocity equal to the gravitation of water-drops, ere any lifting effect can begin, as also in the resistance which a column of air + water of the density of water—2 (which the spray will about be), meets with in the conduits used for its conveyance.

I invite Mr. Adcock to this exhibition of facts, as the fairest way to establish his own scientific character and honour. We all know that he has a scientific constitution of mind; and, therefore, he must excuse me (champion, as I am, in the cause of fact) when I say, that it is not seemly in a man of science to garble or disguise a fact. In addition to the velocity of air of various elasticities, and to the terminal velocities of drops of water, we must have the density of the spray, its velocity, quantity of air in current, and real relation of coal burnt, water evaporated, and water discharged in spray.—W. RADLEY, Ch. E.: Oct. 1.

## ADCOCK'S SPRAY PUMP.

SIR,—I trust that you will allow me space for a few remarks in your valuable columns, by way of rejoinder to Mr. Blewitt's diatribe of the 29th ult. I believe that I am entitled to the favour, not merely with the view of vindicating my judgment upon a matter so peculiarly within my competence as is the success, or non-success, of "Adcock's spray pump," but likewise for the purpose of rebutting, as publicly as they were made, certain insinuations of the honourable Member for Monmouth, which the temperate tone of my letter to a "Rhonda Collier," inserted in a former Journal, renders wholly unjustifiable. I gave that gentleman, therein, every credit for his enterprise and spirit; I even remarked, that it was a source of regret his not having met with the success that he deserved. Little did I anticipate Mr. Blewitt's response to such a kindly sentiment. But, alas! such is the power of interest over almost every mind that no one is long without anger in the maintenance of a position, however untenable, that is ardently wished to be true; or without some sippant plea or other to justify any undertaking which has been dictated by love of novelty and inclination. Nothing, indeed, short of the subtle sophistry of Desires, can explain the bitterness of Mr. Blewitt's invective, distinguished, as it is, by grossness and personality. Error is ever in its nature contentious, which partly accounts for the marvellous levity of this gentleman's assertions, which partly accounts for the marvellous levity. I would put down two of these in *limine*. The inventor of the spray pump is wholly unknown to me. My animadversions were elicited by inquiry; they applied exclusively to his invention, and not to Mr. Adcock. The Victoria Iron-Works were alluded to *par parenthesi*, as it were; the public papers having announced that the "spray pump" was there to be introduced, the "Rhonda Collier," in his letter to me, made inquiries as to the fact. Having thus satisfactorily removed out of the way the two points which are irrelevant to my present object, allow me to proceed. You *certainly* did *allude* to his social and public character, it might have been expected *a priori* from Mr. R. T. Blewitt—considering his position as a legislator, and his having had no small practice in composition, combined, as is understood, with certain editorial advantages—that he would write his own language, if not with elegance, at least with some degree of correctness; but, when one encounters such a sentence as this, "creditable to devote his time in the pursuit of," &c. &c., who can forbear to recommend the accomplished Member to study with some attention the elements of Lindley Murray, ere he again surprises the reading

public with his uncorroborated effusions. It would be to no purpose, however, to rise from the consideration of his style to the subject-matter of his letter. It is only when the conscience is duly enlightened that courtesy and morality cohere, and that gentlemen scorn to do or say what they would not suffer. And this brings me to the character of the man, which there is no necessity to minutely delineate: lampoon, itself, would scorn to speak ill of him. That a man was so notorious for being himself a fit example to vindicate the ways of justice, were not proverbially blind, would, I believe, have been, within memory, a sufficient reason why he should not figure as a legislator; and this reason, notwithstanding the mutability of fashion, happens still to operate on many thinking, sober-minded, people. In the opinion of such, there are eccentricities that not even youth can palliate, when they happen to be left to flourish in their rank luxuriance, even into the meridian of life. In their idea, such delinquents are directed, by their own conduct, of all the respect due to the legislative character. It is not, therefore, to Mr. Blewitt, but to yourself, Sir, and to the public, I owe the following statement, in proof that I had good grounds for deterring my friend and correspondent, at Rhonda, from the use of the spray pump. The cone of water in the pit was about 600 gallons per minute; it was necessary to raise the same, about 18 yards. To deal liberally with Mr. Blewitt, set down the water at 1000 gallons per minute, and the distance to raise the same, 30 yards. According to Tredgold, Brunton, and others, 15 horse-power only would be required. The engine now employed is a 36-inch high-pressure 6-foot stroke, working, on an average, 16 strokes per minute, with a pressure of steam on the boilers of 40 lbs.—or, in other words, sixteen horse-power is now employed to do the work with the spray pump, that 15 would do with the ordinary engine. In my letter, I stated the difference to be as 3 to 1, whilst, in reality, it is 6 to 1. Let Mr. Blewitt get over this fact, if he can, being as he tells the public that the spray pump is eminently successful. Are such odds as six to one to be considered the fulfilment of the promise of extraordinary power and success, held out by certain newspapers, in their reports of the famous exhibition at Llanhiddel? *Spe iactata dura eventus tristic.* It is possible the Member for Monmouth may have met with this dictum of Tacitus, respecting those who open their undertakings with magnificent promises, he may apprehend the dictation of Common Sense and common honesty—names of greater authority than Tacitus—that no man should engage things he cannot perform. But, in order to show that I have not founded my statement upon the ignorance of my readers, but that I court their judgment most whose information is necessarily most extensive, I would ask Mr. Blewitt, if his pit was made one inch deeper in the three first months, after the successful putting in operation of the spray pump? It will be seen, from what I have stated, that whatever arguments may be adduced in favour of Mr. Adcock's spray pump, they must be more plausible than cogent. Specious appears the way, but they cannot be made upon paper, but they cannot be brought into practice among us in South Wales, who witness every day the towering head of Speculation bow down unwillingly to grovelling Experience. But to expect that the omnipotence of truth would have any effect upon the prejudices and obligations of the honourable Member's understanding would be almost as ridiculous as for a colliery owner in Wales to attempt supplying Paris with coal, and, by way of recommendation, designate the article by the name of Waterloo coal! No, Sir. However it may be given to a superior mind to acknowledge the preposterous confidence of Mr. Blewitt in his speculation, and to reflect upon pearls before swine to offer arguments, whose personal interest is concerned, to Mr. Blewitt. Refutation may exaggerate, but cannot convert, or convince, a man; induced by his vanity to undertake, and bound by his obstinacy, if not his recklessness, to persevere; nor, indeed, except in so far as the example threatened to affect the interest of my Rhonda correspondent (a gentleman who resides at that place, and who has been for many years, and is still, engaged in mining operations), should I have dreamt of exposing the pretensions of Mr. Blewitt in his speculation, and to this the man, for that to now-forgotten machinery, as to its proper owner—a spray pump, or a frothy Blevitt—not being worthy of being coiled into utility, nothing but the proverbial "wisdom of fools" can offer a chance of recantation or improvement.

But in what terms shall I calmly speak of the concluding paragraph of Mr. Blewitt's onslaught? It is not simply a wanton misrepresentation of the truth, but one which the writer, of all men in the county, best knew to be such? Whose name, allow me to inquire, in Mr. Adcock's letter, is a "bye word for scorn and contempt?" Oh, the blindness of this politician, who from his glass pulpit, levels his paper pellets! A bye word for scorn and contempt! What could the libeller be thinking of, to suffer his mortified vanity so to get the better of his prudence, as to pen that sentence? To misrepresent the motives and the principles of those who see further than themselves, is, alas! too common with rash speculators and controversialists; but the insolence of invective, and the blindness of cupidit, which characterise Mr. Blewitt's outburst, are certainly peculiar to himself. But let him not mistake the venom of the shaft for the vigour of the bow. He is, in his own mind, as a "bye word for scorn and contempt;" but, to the rest of the world, he is a detected harlot. That which lies heavier on his own consciousness is uppermost on his lips; and this, by the way, is the only explanation that can be given of his affirming that I "insinuated against him a total want of business-like and commercial sagacity, evidenced by the lavish expenditure of money in unprofitable objects." How the price of this enterprising genius betrays him! He talks in his sleep! The murder is out! The notoriety of the fact of his incompetency lies heavy on him as an incubus, and, as he himself has said, he has not Satan's talents, he cannot abate himself for the sake of his devil; but, as he has not Satan's talents, he tries what can be done by assertion without proof, and scurrility without end.

The writer lives with a heart full of suspicion which such retrospections, as those he owns, always generate. He judges of others by himself. Yet hardened in courses, to which I will do no more than allude, with philosophical views, or rather what he considers such, that render him too proud for reproach, and, notwithstanding his superficial glare, too stupid for self-correction, he outrages the high by the insolence of his unprovoked attacks, and corrupts the low by the wickedness of his example. And, to this the man, for that to now-forgotten machinery, as to its proper owner—a spray pump, or a frothy Blevitt—not being worthy of being coiled into utility, nothing but the proverbial "wisdom of fools" can offer a chance of recantation or improvement.

Tunbridge Wells, Oct. 6. Of Newbridge, Monmouthshire.

## ON THE EXTRACTION OF SILVER.

BY MR. MALAGUTI AND EBERHARD.

From the numerous researches, which the authors have made on a large series of specimens from different parts of Europe, they have inferred the general fact, that all metallic compounds which accompany or are found near argentiferous minerals contain more or less silver—so that they deem it an established fact, that silver is probably one of the most widely-diffused metals in nature.

The researches of the authors have been made on sulphurets, arseniurets, arsenio-sulphurets, some metallic oxides, and even native metals. This fact being established, the mode in which the silver exists occupied their attention. As the subject appeared a difficult one, it was simplified by inquiring in what state the silver existed in galena, blende, and pyrites, and they supposed it could exist only in the native state, as chloride or sulphuret. Experiments appeared to show that, in these sulphurets, the silver is not in the metallic state; and experiments still more numerous and decisive seemed also to prove that the silver could not be in the state of chloride; and, on this occasion, they remarked a circumstance which has hitherto escaped the observation of chemists:—They found that all metallic sulphurets, properly so called, and even some arseniurets, possess the property of decomposing a certain quantity of chloride, or bromide, of silver. This decomposition is effected more or less slowly when contact is effected merely by water; but it is produced much more rapidly, and in some cases even instantaneously, when the chloride, or bromide, of silver is in solution. By comparative trials the authors succeeded in determining the decomposing power of a great number of sulphurets, and several arseniurets. Thus—

100 of sulphuret of zinc decomposes 3 of chloride of silver	
100 " " cadmium " 14 " "	
100 " " blende " 2 " "	
100 " " lead " 5 " "	
100 protosulphuret of tin " 4 " "	
100 of bisulphuret of tin " 30 " "	
100 protosulphuret of copper " 360 " "	
100 arseniuret of antimony " 130 " "	
100 " " cobalt " 168 " "	

In operating with natural sulphurets, the authors remarked very considerable differences in their decomposing power. They attribute these differences to the presence of small quantities of sulphurets, or arseniurets, of very high decomposing power; and they suppose they may sometimes attach to the molecular condition of the bodies. They found, for example, that a very pure and well crystallised blende from Königsgberg possessed decomposing power equal to that of artificial sulphuret of zinc; while a blende equally pure and as well crystallised, but coming from Radna, had a decomposing power which was twice as weak, and yet these two blendes were of equal density. The authors draw the following conclusions from the results of their experiments:—

All pure metallic sulphurets possess the power of decomposing, under certain circumstances, a given quantity of chloride of silver, and even of other insoluble chlorides. This power appears to be modified in some cases by the molecular condition. The decomposition of chloride of silver by sulphurets may be effected—1. By double decomposition. 2. By reduction. 3. By simultaneous reduction, and double decomposition. Natural sulphurets sometimes exhibit very high absorbent powers, on account of the presence of minute quantities of foreign sulphurets, or arseniurets, acting by the reduction of the chloride of silver. The decomposing action of sulphurets is exerted proportionately on the bromide of silver, and it is but slightly appreciable on the iodide. In these phenomena the solvent exerts no influence; for the same results are obtained, except as to time, by simple contact aided by water. The general fact of the decomposition of insoluble chlorides by sulphurets appears then to render it probable that, in natural sulphurets, the silver is in the state neither of chloride nor bromide. Having then shown the improbability of the presence of metallic silver, or chloride, in the natural argentiferous sulphurets, the authors are of opinion that it must exist in the state of sulphuret; but, if this conclusion were correct, how does it happen that blende, pyrites, and galena, do not yield silver to mercury? Is not the sulphuret of silver almost as readily acted upon by mercury as metallic silver itself? The authors propose shortly to communicate the second part of this inquiry to the Academy.—*Comptes Rendus.*

BRIDGE BUILDING.—Mr. T. Motley has just published two beautiful engravings, descriptive of his system of suspension and compound wrought-iron bridges—they make very pretty views, and are well worthy framing for preservation.

WITTON PARK IRON-WORKS.—The make of the three furnaces at these works—the property of Messrs. Bolckow and Vaughan, of Middlesbrough-on-Tees—for the week ending Oct. 2, was 464 tons of good forged-iron. The furnaces are under the management of Mr. John Williams.



## THE SILVER AND GOLD MINES OF THE NEW WORLD.

SECOND PART.—ON THE FUTURE PROSPECTS OF THE MINES OF AMERICA, COMPARED WITH THOSE OF EUROPE.—NO. VIII.

In 1774, whilst some repairs were being made in the mine of Klutcheff, a deposit of auriferous sand was discovered, part of which underwent washing the next year. About 1813 other discoveries of the same kind took place; but it was only in 1823 that the workings now carried on were commenced. They are in beds scattered through the mass of alluvions of sand, which compose the soil of Northern Asia and Europe. The form and richness of the auriferous beds varies greatly. The beds are in general oblong zones, the width of which is only the twentieth part of the length in the greatest (those of 500 metres), and of a twelfth in the least. They are disposed in smaller or greater numbers, sometimes on arid table lands, sometimes by the side of rivers, or in marshy places. Their thickness sometimes is not more than 20 centimetres, but it often approaches 3 metres, and, on some points, is even more. Some are worked which do not contain in weight more than a 100th of gold, which supposes a proportion eight or nine times less in volume. Some, however, are found which have 20 and 50 times as much. Gold is disseminated in such small quantities in the midst of the sand and gravel, that the sharpest eye, even with a strong magnifying glass, would seek in vain to perceive it in the cutting of the beds; but, nevertheless, it is there found in the metallic state, free from all combination.

In the midst of the mass of mountains some veins of quartz are found, in which gold shows itself in sufficient quantity to make it worth while to work them; but the gold thus obtained forms only an imperceptible portion of the total production. It is at Berezofsk that this working is more particularly made.

At more than 2000 kilometres from the Oural, in the heart of Siberia, the valleys of auriferous sand are worked in the midst of other metallurgical riches. The chain of the Altai, more extensive than the Oural, and with more elevated heights, covers a great space in Asia in the Russian possessions, and at the limits of the two empires, of which one obeys the Czar, and the other the Son of the Heavens. In the midst of these barren mountains, mines of silver, and other metals, have been worked for a long time. So far back as the seventeenth century, an industrious Greek presented the Czar with some lingots of silver, which he had obtained from them. The working for gold is much more recent, dating only from 1830. In the Altai there are two mineral divisions; the region of the Altai Mountains, which is very spacious, and in which a great deal of gold is obtained; the other, which is much farther to the east, at the extreme confines of Siberia, is that of Nertschinsk, in which are the auriferous sands, which at present are very productive. The country also possesses mines of lead, with silver, of tin, of iron, and besides precious stones are found; but, unfortunately, the climate is very rigorous, the average temperature being 3° centigrade below zero.

In 1829, M. de Humboldt, at the head of an expedition organised by the Emperor of Russia, traversed the regions of the Altai, and an intrepid and learned traveller, M. de Tehihatcheff, after a painful journey, has made known the most savage parts of them, by a work, which has justly been remarked by the scientific world. These regions offer an infinite field to the arts of metallurgy. To confine ourselves to what concerns the precious metals, gold is found in far more extensive deposits than in the Oural. The richness is, however, nearly the same, or, to speak more correctly, to it is counted in Siberia, as everywhere, in the Altai, or in the nearest mountains to China, by fractions of 1/1000th. The gold obtained is, however, greater in value than the cost of obtaining it. The beds of auriferous alluvion of the Altai, like those of the Oural, and other countries, which produce gold, are often covered by a certain thickness of other sands, which are sterile, and which it is often necessary to remove, whereby the cost of extraction is increased. Even, however, with all this expense, the deposits are attacked with success by the mechanical means furnished by European science. The extraction of gold has given in certain cases enormous profits, like the silver mines of Mexico. The vulgar, dazzled by the brilliant fortunes which it has seen all at once arise from the working of auriferous sands, took a passion for this description of industry, without giving itself the trouble to count the seekers after treasures who were ruined thereby; and it is thus that the metallurgical workings in the Altai have taken even greater development than those in the Oural, in spite of the severity of the climate, the thinness of the population, and the difficulty of procuring food in those distant deserts, which are still more inhospitable than those in which Nature has placed the mines of Potosi.

We have said that it was in the Oural Mountains that the workings for gold first commenced in Russia. The Crown divided the labour and the profit with private individuals. It awarded to itself, both in this chain and in the Altai, the western side of the mountains, abandoning the eastern side to private industry. This division was found to be very unequal, and to the detriment of the Crown. The deposits on the western side are much less rich and less numerous than those on the opposite side. Some years after the Oural, the Altai Mines were worked. The working of the latter rose gradually until it surpassed the former, which soon began to decrease. Thus, in 1845, the Oural yielded, according to official returns, 5558 kilogrammes, and Siberia, 16,009 kilogrammes. M. de Humboldt estimated that, at the end of 1838, the total production of all the mines of Russia, since 1828, was 84,362 kilogrammes of pure gold, or an average of 5273 kilogrammes per annum; but the production was not equal during that period—it gradually increased.

The official results of the washings of gold in Russia, during the last 10 years, are set forth in the following table, which I owe to the compliance of M. de Botowski, official agent at Paris of the commercial and financial administration of the Russian Empire:—

Years.	Belonging to the Crown.		To private Individuals.		Total.
	From the Oural Mountains.	From Siberia.	From the Oural Mountains.	From Siberia.	
1836	Kilogs. 2108	Kilogs. 336	Kilogs. 9690	Kilogs. 1384	Kilogs. 6520
1837	2146	427	2094	1751	7248
1838	2160	458	2757	2706	8081
1839	2294	389	2740	2612	8075
1840	2197	438	3081	3548	8974
1841	2154	477	2708	3263	10,507
1842	2134	620	2653	3469	14,778
1843	2281	693	2891	44,504	50,899
1844	2226	755	3841	15,068	20,910
1845	2121	862	3237	15,147	21,367

But the gold referred to in the preceding table is not pure; it contains 12 per cent. of alloy, almost all of which is silver. On the other hand, the duty of 20 or 25 per cent., which is levied for the profit of the Crown, causes private individuals to dissipate, as much as they can, part of their production. Mr. McCulloch, in his *Commercial Dictionary*, under the article "Precious Metals," estimates the proportion of gold which thus finds its way to the general market at a fifth of the declared production. We will admit that estimate.

Siberia also contains mines of silver, which have been long known. In the Altai there are several mines of silver, of which the finest were in activity in 1726, thanks to the industry of Akenfi Demidoff, chief of the family, which has so much contributed to bring into use the mineral riches of the Russian Empire. Since the commencement of the works, up to 1835, they had yielded, according to official documents, 1,141,817 kilograms of silver, from which were extracted 31,122 kilogrammes of gold. During the 16 years, from 1823 to 1838, the mines of Altai yielded 240,855 kilogrammes of silver, or, on an average, 15,053 kilogrammes. The present production is estimated at 16,340 kilogrammes. These mines are curious from the extreme poorness of the ore, which, however, is treated with profit. The most powerful of them, those of Zerkonofsk, contain only 44 solotniks per pound,\* or 117 in 100,000—that is hardly an atom beyond the point at which the Mexican ores cease to be treated, and those of Palaisk have only a yield of from six to seven times less, exactly 184 in 1,000,000. They are treated by fusion, which supposes a combustible of which the value may be counted for nothing. The process is, however, such that out of 100 parts of silver contained in the ore 35 are lost. More to the east, in the circumference of Nertschinsk, the working of the mines of silver, formerly carried on by the people of Finnish race, was resumed by the Greeks at the commencement of the eighteenth century. It is calculated that, from 1704 to 1838, they yielded 223,783 kilogrammes of silver, which furnished 1132 kilogrammes of gold. Their greatest prosperity was towards 1765—then the produce rose to 8190 kilogrammes of silver. From

\* A pound is 16 kilogrammes 38; a Russian pound, of 40 to the pound, 41 grammes; 1 solotnik, of 96 to the pound, 4 decigrammes.

1823 to 1838, in 16 years, it was 84,082 kilogrammes, or, on a yearly average, 3380 kilogrammes. Ten years ago, it was estimated at 3767 kilos.

During the decennial period, which closed 31st December, 1845, the silver mines of Russia yielded, according to official returns, 199,449 kilogrammes of silver, and 5813 kilogrammes of pure gold. The production has varied little from year to year, and the oscillations being sometimes an increase, sometimes a decrease, indicate a stationary state.

The production of the Russian Empire, calculated, according to 1845, the last year for which returns have been made, is as follows, allowance being made for smuggling, one-fifth for gold, one-tenth for silver—22,564 kilogrammes of pure gold, of a value of 77,770,000 fr.; 20,721 kilogrammes of pure silver, 4,600,000 fr.—total, 82,370,000 fr. But this production is not stationary for the most precious of the two metals. The extraction of gold in 1846 appears to have considerably exceeded that of 1845.

The treasure furnished by the Russian Empire, since 1823, for gold, and since the commencement of the eighteenth century for silver, amounts to 217,534 kilogrammes of gold, which is equivalent, according to the Tariff of the French Mint, to 750,000,000 fr., and to 1,831,544 kilogrammes of silver, or 407,000,000 fr. The total sum is 1,157,000,000 fr. Compared to what has been yielded by the mines of America, it is 7 to 100 for gold, for silver almost a parcel—one hundredth and a half, and for the whole a fraction beyond 3 per cent.

(To be continued in next week's Mining Journal.)

## THE GREAT WELSH COLLIERY CASE.

IN THE MATTER OF THE ARBITRATION RESPECTING THE MOSTYN COLLIERIES, NORTH WALES.

[Continued from last week's Mining Journal.]

## THE DEFENDANTS' CASE.

Mr. W. N. WELBY stated that, with the consent of the plaintiff's counsel, he would at once proceed to examine his witnesses, and recross his remarks till the conclusion, as that mode would save time, and enable some of his witnesses to return from London the sooner. This arrangement having been acceded to,

George Johnson, of Newcastle, was called and examined by Mr. WELBY. He stated that he was a coal-viewer and proprietor, and had had considerable experience for 46 years. At the request of the defendants, he had examined the Mostyn Collieries. The crash had subsided entirely: there was no indication of its being in motion. The parts which had been crushed were, in many parts of the mine, now cleared up, and a good fire-road made through. Timber had been placed to prop up and support the roof. The expense of continuing this mode of repair would be very small—not more, with labour and material, than 15s. a yard. In his judgment, the crash was no impediment to the working of the mine, and the whole of the coal could be worked. In his judgment, the working of the block of coal left after the crash of 1838, had no effect in producing the creep of last October. He had noticed the walls, pillars, and wickets, and he considered them sufficiently strong. Generally, the mine was in good condition. His opinion had been formed as to the cause of the creep: and from having been formed, that the coal was not exclusively out of a crop, and was the best coal sold in London. He considered that it was more prudent to work this mine from the crop than the deep. There was no probability of any loss of the mine. He stated, that in his district the custom was universal, that on coal used for the pumping engines, by agents, smiths, and workmen, no royalty was paid. A small charge is made on coal used in winding, but that is by agreement; the rest is regulated by usage entirely.

Cross-examined by Mr. GOWAN.—At Burden Main Colliery, 30 to 35 per cent. of the coal was extracted; this was the depth of 70 yards under the surface. The Bencham pillars were 9 to 10 inches thick, and the wickets 4 inches wide. After going through the mine, we "robbed" some of the pillars; but a crash came, the cause of which was taking away too much of the pillars. That mine was at a slight inclination, of 14 inch to the yard. The Tyne is not a wide river: at Shields, it is about 300 or 400 yards across. Witness never knew a creep under the Tyne being worked through. If the stratification had subsided, the putting through the creep would not cause a reaction. No more danger than that if it were under land.

William Anderson, of South Shields, examined by Mr. ARTHUR.—Witness stated, that he has been a coal-viewer 35 years, and had considerable experience. One of the questions he had been asked, was, whether he considered the coal to be the best coal sold in London. He had examined the mines in question. Found the creeps had subsided, and that in many parts a good horse-road had been made through them. Creeps, he said, were of frequent occurrence in mines; had often known them worked through, and then to be safe and convenient. The creeps in the Mostyn Collieries would not interfere with the future management of the mine. As to the water in the mine, witness thought it did not come from the sea. The cause of the creep he considered to be, that water, if it came down the floor, would be partly soaked up, and made it yield to the weight above. Measured the pillars, which were standing, and found them to be sufficiently strong to support the roof. In his judgment, the proper course would be to pass through the creep, or get the coal from the downhill: there was no difficulty in the way. Had examined the engine, and considered it sufficient to pump out more water than now went to the mine. As to the custom, he confirmed the last witness, and said that he had always known coal allowed for the engines, smiths, and workmen, free of royalty. There was no agreement—it was a right by usage.

Cross-examined by the ARBITRATOR.—In the High Main Colliery, we did not take more than 43 per cent. under the Tyne. After going over the mine thus, we took out all the coal at 115 fathoms, and let down the whole surface; but when we work under towns and buildings, we have to be careful. In the Mostyn Mines, I think, 60 per cent. was taken. We examined the works as we went along the creeps—we did not go into the works. If the creeps were to turn out to be getting smaller and smaller, I would still persist in saying the creep was stopped. In working under a river, care is taken, which is not taken in the deep. There is too much coal got in the works which stood at Mostyn were about 40 per cent. of the whole coal, with 50 per cent. excavated. I think the cause of the crash was, that water acting, as was stated to us, on a soft floor, had made it yield to the weight above. If I saw water coming on such a floor, I would work stronger. The creeps are trifling—not more than 2000 worth of coal crushed. I don't say how many acres. Under a river, it is better to have a creep, because you get the coal easier: if you don't bring the water down, the creep is beneficial to the mine. If the block which he had spoken of, had been left to check the creep, I should, in 1846, still have worked it; but I consider this had nothing to do with the crash. I did not examine the pump, to see if the valves were closed.

William Barrow, of Durham, examined by Mr. WELBY.—Witness stated, that he is a colliery-viewer, and part owner of several large collieries. Has had considerable experience. Had examined the Mostyn Mines for the defendants. He considered the creep of October had caused no impediment to the working of the coal that was to be won. Had the block of coal left after the creep of 1838, not been touched, the creep would not have been prevented—that had no connection with the working of this place, but was produced by water acting on the soft floor. Considered the creep could be worked through at an expense of 11s. a yard. There was too much coal got in the works which he examined: this reason for saying so, because the creeps were stopped. Creeps are common to coal mines: they are not to be feared. The mine must be opened out before a correct knowledge can be had of the quantity to take. The present engine power was quite sufficient, and the new winning is quite unnecessary. He tasted the water, but said it did not come from the sea, but had rested in bags in the fissures, of the sandstone, above the top seam of coal. It is not sea water that is in the mine. He considered it not injudicious to work from the crop. His experience was, that the whole of the coal coming from collieries, by the wickets, and agents, and in their houses, was allowed free of royalty. As to the lesser coal, he could not speak.

Cross-examined by plaintiff's ARBITRATOR.—In the cases I have spoken of, about coal being allowed, there was one exception in the lease; it was a matter of agreement between the parties. I have never known the case of working through a creep under a river. I think there is no difference between working through a creep which is under a river, and one which is not. I think, if the creep has not subsided, and it should be worked through, it is better to work through the creep, than to work from the deep. The water that comes into the mine does not come from the sea, but from fissures in the rock, above the top seam of coal. That this water has lain in these fissures since the flood. I do not think the thickness of the seam of coal, nor its angular declivity, have anything to do with the proportion of coal to be got: I would get as much out of a thick seam as a thin one. I think there is less pressure upon a seam with a steep inclination, than a flat one. I did not see any other standard than that in the pit-shaft. As to the engine, I did not look to see if the safety valves were loaded. If the coal could not be got by the present winning, I would first see the value of the coal left, and, if valuable enough, I would put down a fresh winning.

Re-examined by Mr. ARTHUR.—I have a general knowledge of engine work, and spoke from that. The water, I consider, does not come from the sea, but from some cavity in the sandstone; and that it will drain away. I consider, there is no permanent damage done to the mine.

George Elliott, of Belmont, called and examined by Mr. ARTHUR.—Is viewer and manager of Belmont, Leasingthorne, Monkwearmouth, and Ashworth Collieries. Has had very great experience in managing collieries. Surveyed the Mostyn Collieries for defendants. The creep had subsided. Has known much of creeps during his experience, and has worked through them. Quite familiar with the mode. Has one at this moment under his superintendence: he had purchased it, with the intention of working the crushed pillars. It only costs 3s. 6d. and 4s. 6d. a yard to clear through a crush—the timber 2s. 6d. a yard more. The working of the block left at Mostyn after the crash of 1838, had nothing to do with the creep. The cause of the crash was, that water had acted on the floor, and made it so soft, that it could not sustain the weight. The water had come in accidentally. Has known many creeps brought on by water acting on the floor: that was the cause in witness's own colliery. A creep does not denote unskillful working. Could not see that taking away too much coal had caused this creep. What wickets and pillars he saw were sufficient. Tasted the water in the mine, and considered it had not come from the surface: it was salt, but, in his judgment, had proceeded from the strata of stone overlying the coal. Witness has a case at Urworth Colliery, which he manages, where he has worked through a crush under water, and none comes to the mine. The water was a pool, formed by rain, which had fallen into a small depression. The mine is 12 fathoms deep. It is every-day practice to work through creeps, as easy as possible. The engine is able to do more work than is put on her. I think, working from the creep is better than working from the deep: my experience proves this to be the best, particularly under a river. The mines have been worked in a fair, proper, and workmanlike manner. No necessity whatever for a new winning. Witness stated, that he had examined tracings of the plans made by the plaintiff's surveyor, and found several inaccuracies in them, which he pointed out. The usage is invariably to allow coal to workpeople, the engines, and works, as well as lessees, free of royalty. The mines are benefited by the crush, rather than injured.

Cross-examined by Mr. GOWAN.—My management of Belmont commenced six years back, at Leasingthorne, two years before. Before then, I had been an assistant at Monkwearmouth, for 11 years. The property of the colliery, the property of coal, was worked at Monkwearmouth is not more than 12 to 14 per cent. under the Weir. The seam is very flat, and the width of the river is about 100 yards. I have no other experience of a mine under a river. When a mine is under a river, no more caution is observed than under land. I know of creeps occurring with only 14 per cent. taken. Sometimes creeps occur, which no strength of pillars could prevent: the weakness of pillars may be one cause of

creep. If it could be discovered, that in some places the pillars left at Mostyn were thinner than those I examined, and a creep followed, that might be a cause. I do not know the size of the pillars that were left in the parts that are crept. He had compared the water in the mine with the sea above, and said there was some similarity, but there was a dissimilarity. Considers the water came from the stone—can't say specifically which stratum. If the water in the mine should be sea-water, I can give no account how it comes there. I have often known freestone to contain large quantities of water, that has been there a long time—probably from the creation of the world. The additional influx of water from the creep is 800 gallons a minute; this has been the lowest rate of influx, and it has continued now nearly a year. I think the freestone contained all this water—may be from a brine spring. I am concerned in a case at Dukinfield, for damaging a chapel, from under which the coal has been taken. When I measured against plaintiff's plans, I took down the quantities. I have lost the book, and cannot produce it.

Mr. Thomas William Jobling, of Jarrow, examined by Mr. WELBY.—Witness stated, that he is manager and part owner of Jarrow Colliery. Had had considerable experience. Had examined the Mostyn Colliery for the defendants. The creep of last October had, in witness's judgment, quite subsided: no harm had been done by it to the colliery, and the crushes could be cleared up and worked through at a very trifling cost. The mines, in their present state, present no obstacle to the winning of all the coal that is yet ungot. Examined the works which were upstanding, and considered, from their condition, that enough coal had been left to support the roof and works. He considered the working of the block of coal left after the crash of 1838, to have had nothing to do with the present creep. If the block had remained, he did not think the creep would have been prevented. He had examined the water flowing into the mine—it did not come from the sea. Thinks the cause of the creep was water flowing through, and acting on the floor—making it soft, and causing the pillars to shrink. Had found inaccuracies in the plaintiff's survey, and pointed them out to the arbitrator. Had examined the pumping engine, and found her sufficiently strong to keep the mine dry. The invariable custom in the north, is to allow coals to agents, workpeople, workshops, and blacksmiths, free of royalty.

Cross-examined by plaintiff's ARBITRATOR.—My age is 33. I have been a coal-viewer 16 years. Before being a viewer, I was at school: from school came to be a viewer. That is my experience. If more coal had been got in the parts that are crushed than in those which I examined, that might cause the crush. I think the water came from the stratification at top of all the coal seams—not from the sea. I have no means of knowing how much water may be in the fissures. I have not got my measurements of the parts of the plaintiff's survey that I object to—I gave it to Mr. Elliott, and he has lost it. I did not see whether the safety-valves of the engines were loaded. I have no means of knowing that the water has decreased since the crush began. We did not go up into the works—we went along the cross, where it has been opened and timbered up.

William Armstrong, of Newcastle, called, and examined by Mr. WELBY.—Witness is a coal-viewer, and is manager of Lord Howden's Colliery. Is viewer of 20 collieries for the Dean and Chapter. Has had considerable experience. Had examined the Mostyn Collieries for the defendants. Found that the creep had quite subsided—not the slightest symptom of motion existing. Examined pillars which were upstanding and sound, and had measured their proportions, and considered enough coal had been left, and not too much excavated. There is no difficulty in clearing a road through the creep, and working the coal beyond as well as ever. My judgment of the creep is, that there might be joints in the stone. Thought the working of the block left in 1838, had not the remotest connection with the creep. He considered, that much of what had been called crush and creep, was but the ordinary slipping of the roof. Witness considered that, if it had taken place throughout the mine, the security of the works would be very much increased. In my judgment, the floor of the coal being acted upon by water, would become softened, and yield to the pressure. Witness said, he had formed no opinion of the causes of the creep of 1846. If the pillars were left thinner than I understood them to be, and water came through, and a fault ran in the district, there would be enough to produce the creep—but I am at a loss to conceive how the creep arose. If the pillars had been left thick enough, and the water had come in and softened the floor, this would be no unskilfulness, but an accident of mining, which no human foresight would prevent. He considered the water had come from the strata overlying the top coal, and did not come from the sea. The water contained sulphate of hydrogen—there was also sulphate of iron. Has often found salt water in mines far from the sea. The depression shown by the level of the river at Mostyn, is no indication that the water comes in from there. Examined the engine—she delivered about 1550 gallons a minute, and was not working her maximum speed and useful effect. He considered it most judicious to work from the crop in the first instance. As to the usage about royalty, coals for colliery consumption are always exempt from royalty. It is by virtue of a stipulation in the contract, and is always subject of agreement. Judging from what I saw, a new winning would be a most useless expenditure.

Cross-examined by Mr. GOWAN.—In our examination we kept in the crop generally—we did not go into the workings. The block of coal left in 1838 was, I should think, left as the result of accident: if left to stop a creep, the person who left it could not have understood his business. Blocks are sometimes left in proper situations. The fall of stones which occur in a mine, and have occurred here, is a good result. I am very glad to see it in my mines. In the mines in the north, where the water is salt, it comes from brine springs, and salt is made from them. No salt, that I ever heard, was made in Wales from any springs there. The depression on the surface is certainly a suspicious circumstance in favour of the view that the water may come from the sea. The Jarrow Colliery is under the Tyne—that is rather flat: we took there about 32 or 33 per cent. only; then we went over them again, and a creep came. The same state of things, precisely, took place in the Jarrow. Diminishing pillars is a great cause of creep.

Re-examined by Mr. ARTHUR.—I think the water came from the stone, and not from the sea; and I made measurements of the water, at different parts, to see if this were so. Pillars that have been sufficient, may, through accident, become insufficient; as for instance, a feeder of water acting upon the floor.

By Mr. GOWAN.—I dislike a creep under a river: if I could avoid it, I would never have one.

William Thomas, of Bagliff, Flintshire, called and examined by Mr. WELBY.—Witness is a coal-viewer, of 16 years' experience, and is chief-viewer of Sir John Hamner's Colliery, on the Dee. Had examined the Mostyn Collieries for the defendants, and considered they were properly worked. He had found inaccuracies in the plaintiff's surveyor's plans, and pointed them out. The creeps had subsided: no harm had been done to the colliery. The remedy of working through the creep was simple, and cheap. Was sure that was sufficient, and no new winning was requisite. On the Dee, coals used by the workpeople, and for colliery purposes, are free from royalty: it is stipulated in the leases. Has seen them. Allowance is made out of the royalty, for the expense of shipment.

By ARBITRATOR.—I have attended to Sir John Hamner's colliery seven or eight years, during my time there has not been any creep there.

John Jones, of Bagliff, called, and examined by defendants' ARBITRATOR.—Witness stated, that he is underground agent at the Colehill Colliery, on the Dee. Had been a colliery 27 years. Had examined the Mostyn Collieries for the defendants. Considered they had been properly worked, and that more coal had been left than in his colliery. He said, that he saw no creep in the mines, and considers there is no impediment to the future working of the colliery, without a new winning—this he considers quite unneccessary.

Cross-examined by plaintiff's ARBITRATOR.—At the colliery I speak of, where I was employed, we only worked one seam of coal under the sea. There were other seams, but they were not worked. No creep came there. Our object in working only one seam, was to prevent a creep.

[The conclusion of the case will appear in next week's Journal, accompanied by some editorial comments.]

## IMPROVEMENTS IN GAS METERS.

[Specification of patent granted to Thomas Edge, Great Peter-street, Westminster, in the county of Middlesex, gas-meter manufacturer, for his invention of improvements in the manufacture of gas-meters.]—*Newton's London Journal*.

It is well-known to gas meter manufacturers that the metal of which meters are usually constructed is liable to be injuriously acted upon by the gas, or certain matters that come over with the gas, which passes through the meter. It is also known that some of these destructive agents, such, for instance, as the ammonia contained in the gas, act more energetically in the presence of moisture than otherwise, as water takes up the ammonia; and when a solution of ammonia comes in contact with the metallic parts of gas meters, as usually constructed, a voltaic action between the parts is induced, and the rapid destruction of the meter ensues.

The object of this invention is to prevent, or at least very materially to retard, the destruction of gas-meters from these causes; and for this purpose the patentee proposes to construct meters of plate-iron, which has been previously coated with metals (or an alloy of metals), capable of resisting the chemical action above mentioned. The metals, or alloys of metals, employed for this purpose are tin and zinc. Any of the known means for coating plate-iron with these or other metals, or alloys of metals, may be employed. The patentee does not, therefore, restrict himself to the use of metals coated by any particular process or processes; but he prefers to use plates coated in the manner or by the process described in the specification of a patent granted to Mr. E. Morewood, August 27, 1841, or that described in the specification of a patent granted to Messrs. Morewood and Rogers, May 4, 1843. Or, he sometimes employs plates coated with an alloy of metals, consisting of equal parts of zinc and tin, or an alloy of which these or either of these metals form a component part, by the process described in the specification of a patent also granted to Messrs. Morewood and Rogers, December 7, 1846.

It should be remarked, that it is important to make all the internal metallic parts of a water-meter of one and the same kind of metal, so that no voltaic action may be induced between the several parts; the internal solid parts of the meter should therefore be made of an alloy of metals, bearing some analogy to the coating of the plates or sheets of iron of which the case is constructed. For this reason, therefore, all the solid parts of the meter which are liable to be injuriously acted upon by the gas, or which come into contact with the water in the meter, are constructed of an alloy of metals, consisting principally of zinc and tin, in equal or nearly equal proportions. The proportions of this alloy may be varied, and other metals added, for the purpose of altering the hardness of the alloy, as is fully explained in the specification of Messrs. Morewood and Rogers' patent of December 7, 1846; but, as a considerable degree of hardness is required for some of the parts, such as the spindles and wheels, the proportion of zinc ought to preponderate. For the purposes above-mentioned, an alloy consisting of from 50 to 70 parts of zinc to from 50 to 80 parts of tin, will be found to answer the purpose.

The patentee states, that he does not intend to claim the exclusive right to use, for the manufacture of gas-meters, plates of iron coated with tin or zinc, or, as plates so prepared would not answer the intended purposes; but he claims the application to the manufacture of gas-meters of plates or sheets of iron prepared with a coating of tin, and then a coating of zinc, or with an alloy consisting of zinc and tin, or other metals, as above set forth; and he claims also making the solid internal parts of gas-meters of an alloy of metal, having zinc and tin as the basis.

## THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Oct. 2, was 18,080; amount of money, £78 6s. 8d.

A quarry of white marble, of a quality fit for the sculptor, has recently been discovered at Gabas-Larin, near Pau.



## Proceedings of Public Companies.

### MEETINGS DURING THE ENSUING WEEK.

MONDAY.....Demerara Railway Company—London Tavern, at One.  
TUESDAY.....Kirkcaldy and Brechin Railway Company—offices.  
WEDNESDAY.....Copper Mines in England Company—offices, at Two.  
THURSDAY.....Royal Mail Steam Packet Company—London Tavern, at One.  
FRIDAY.....Imperial Gas-Light and Coke Company—offices, at Twelve.  
SATURDAY.....Great North of India Railway—offices, at Twelve for One.  
[The meetings of Mining Companies are inserted among the Mining Intelligence.]

### LYNVI IRON COMPANY.

An extraordinary general meeting of proprietors was held at the offices, Moorgate-street, on Wednesday, the 6th inst.—Dr. BOWRING, M.P., in the chair.—The advertisement convening the meeting having been read, the CHAIRMAN stated, that the object of the meeting might be gathered from the advertisement just read, which was to empower the directors to borrow from time to time, as their exigencies might require, any sum, or sums, of money not exceeding 50,000*l.*, in addition to the aggregate amounts mentioned in the 93d clause of their deed of settlement; this being the only business before the meeting, a resolution to the above effect having been moved, seconded, and carried unanimously, a vote of thanks was passed to the chairman, and the meeting separated.

### PATENT GALVANISED IRON COMPANY.

An extraordinary and half-yearly general meeting of proprietors was held at the London Tavern, Bishopsgate-street, on Monday, the 4th inst.—Mr. MALINS in the chair.—When the report of the joint committee of directors and shareholders was presented; from this it appeared, that the works of the company had now reached the period of their utmost development, and that no further outlay would be required on that account. A deputation of the committee had visited all the works, and expressed themselves to be highly gratified with the state to which they had been brought. Owing to the increase of the trade of the company, and the pressure of the monetary crisis, it was stated, that it was desirable to extend the working capital of the company, and a recommendation to that effect was made to, and adopted by, the meeting. The directors accordingly were empowered to create new capital, to the amount of 100,000*l.*, and to issue so much thereof in preference shares, bearing 10 per cent. interest, and redeemable at the expiration of three years, as they should deem the exigencies of the company required.—The meeting then separated, after a vote of thanks to the joint committee.

### RAILWAY CALLS.

The following is a statement of the total amount of railway calls which have been made during the present year—showing the amount called up each month, and distinguishing the English from the foreign companies:—

	British.	Foreign.	Total.
Calls payable in January.....	£4,497,968	£1,682,000	£6,179,968
February.....	1,454,881	80,000	1,534,881
March.....	3,983,687	508,000	4,491,687
April.....	4,318,430	40,000	4,358,430
May.....	2,965,344	514,000	3,479,344
June.....	2,454,756	1,550,000	4,004,756
July.....	3,894,845	1,032,000	4,926,845
August.....	2,222,839	63,000	2,285,839
September.....	3,235,874	800,000	4,035,874
October.....	3,365,651	92,300	3,457,951
Total.....	£31,538,994	£5,334,360	£36,873,354

From the above, it will be seen that 6,334,360*l.* belong to foreign railways, and are, therefore, only in part payable by English shareholders—leaving 31,538,994*l.* as the actual amount called for by English railways.

### PROGRESS OF THE RAILWAY SYSTEM.

#### THE GREAT WESTERN LOCOMOTIVE WORKS AT SWINDON.

The policy which dictated the erection forthwith of the additional locomotive works that are now rapidly progressing towards completion at Swindon, and from the present imperfect operation of which results beneficial to the public and the proprietors of the Great Western Railway have flowed, is, we believe, little understood. That policy partakes of the same wisdom which has secured to the company, at low per-centage guarantees, several of the lines in connection with the broad gauge system of railways. Glancing at the future position of the company—viz.: when the Oxford and Rugby; the Berks and Hants; the Monmouth and Hereford; the South Wales; the Oxford, Worcester, and Wolverhampton; the Wilts, Somerset, and Weymouth; the Great Western and Uxbridge; the Great Western and Wycombe; the Cornwall, Gloucester, and Forest of Dean; the Birmingham and Oxford Junction; and Birmingham, Wolverhampton, and Dudley lines shall be opened, it was seen that a locomotive establishment far more extensive than the existing one at Swindon, would be required for the effective repairs of the immense stock with which the managers of the Great Western Company will then have to deal. The erection of large additional works at Swindon is inevitable—the outlay must be made sooner or later; delay in the construction of the lines to which we have alluded might defer the erection of the complete works for three, four, or five years—but to have such works in readiness at the termination of such period was seen to be a matter of necessity; but the managers of the great broad-gauge interests determined to construct the necessary additional buildings at once. Their motive for this decision was one of economy; for, on a calculation made by the practical men connected with the railway, it was ascertained, as we are informed, that by making use, for the construction of locomotives, tenders, and trucks for the new lines, of the workshops which will be required for the repair of stock used upon the above and the existing lines, the saving of a sum of money which will be equal to the cost of erecting additional shops, could be clearly realised; that, in fact, by the company building the works now, and undertaking the construction in them, of locomotive stock and trucks for the several hundreds of miles of broad-gauge railway that will be opened in the next four or five years, a saving of something like 20,000*l.* per annum might be effected.

It is stated by the locomotive superintendent of the Great Western line, Mr. Daniel Gooch, an eminently practical man, and regularly educated in the locomotive workshop itself, that the company can complete the locomotive and tender of the very best materials and workmanship, without stint as to the price of steel and iron, or pay for first-rate men, for 400*l.* less than can be procured from the manufacturer; 400 locomotives and tenders will, it is stated, be required to work the traffic over the broad-gauge lines in the course of construction. During the last 20 months there have been manufactured at Swindon 34 engines, with tenders, and a considerable number are now in a very forward state of construction. The completion of the works will, we are informed, enable the company to put upon the line annually 60 engines with tenders, and 250 trucks with axles and wheels. The saving to be effected by making use of each of the trucks is set down at 2*l.* If the calculations respecting the cost of manufacturing engines, tenders, and trucks be correct, the estimated saving over a series of years is not a very difficult arithmetic problem. The entire cost of the works at Swindon, including the outlay for the erection of the residences for the additional number of workmen to be employed there on the completion of the buildings in progress, will, as we are officially informed, amount to about 220,000*l.* The station, workshops, men's residences, cricket-ground, and the church—a very beautiful structure—occupy about 14 acres of land, which have been purchased at 20*l.* per acre; and it is stated that the cost of the additional shops for the present exclusive manufacture of locomotives, tenders, and trucks, but which, as we have observed, will hereafter be principally devoted to the repairs of locomotive and truck stock, as well as, of course, for the manufacture of the current want of locomotive stock, will amount to about 100,000*l.* If the company turn out locomotives, tenders, and trucks at the estimated capability of the new workshops—viz.: 60 locomotives, with their tenders, and 250 trucks per annum—then the saving contemplated, it is clear, that the anticipated erection of the additional works will realise to the Great Western people a saving of about 20,000*l.* per annum. This calculation, however, supposes that an outlay of about 25,000*l.* required for the erection of the residences of the additional number of men wanted will return 8 per cent. in the shape of rent. We are (after having inspected the houses already built at Swindon by the company, and being put in possession of a list of the rents charged), inclined to doubt whether the return upon this sum will yield more than 4 or 4½ per cent.; but, as these houses will be required for the additional work people that must be employed for repairs, which the line in connection with the broad gauge system is open to the public, we can deduct as a loss to the company only the difference between the 4 or 4½ per cent. and the 8 per cent. dividend paid to the proprietors, or the difference between the 4 or 4½ per cent. and the rate of interest at which such 25,000*l.* may have been borrowed by the company. Taking the saving at 20,000*l.* and not at 29,000*l.* per annum, and the anticipatory construction of the new works will, by the preliminary devotion of them to the manufacture of locomotive stock and trucks, produce to the company, in the course of four years, the entire cost of such works.

The locomotives that have been built at the Swindon works, and now running on the line, are amongst the best ever manufactured in this country. Not only are they the most powerful in the world, both as respects their capability to deal with heavy loads and attain high velocities, but their manufacture may be said to be almost perfect. We have frequently been over the shops when the men have been at work, and have derived much pleasure from observing the great care with which all of them attend to the duties committed to their charge. The most excellent attention is paid to their spiritual and moral welfare by a pains-taking and zealous clergyman; a well-selected library has been provided for them; a mechanics' institution formed, and a cricket-ground opened for their amusement; and the happy consequence is, that a more intelligent, industrious, or well-behaved body of mechanics is not, we believe, to be found in the kingdom.

A few weeks since we gave the quantity of coke burnt by the Great Britain eight-wheeled engine, with a train of 90 tons, travelling at an average speed of about 37 miles per hour between Paddington and Swindon, with five stoppages. The quantity was as high as 51 lbs. per mile, but the train was very heavy—a strong wind prevailed during the whole journey, and the velocity was very high. On Thursday we had an opportunity of ascertaining the consumption of coke by the *Iron Duke*, one of the eight-wheeled class of locomotives, with a train of about the same weight as the one already alluded to, but travelling at an average velocity of only 37 miles per hour between Paddington and Swindon, with five stoppages, and back with 60 tons at upwards of 25 miles per hour, with 16 stoppages, and we found the average consumption of coke over the whole journey was under 29 lbs. per mile. The *Iron Duke* has an 8 ft. driving-wheel, 18-in. cylinder, and 24-in. stroke. With 60 tons up from Swindon on Thursday, the driver cut off his steam at 9 in., and kept his time at the stations with perfect ease. We believe this consumption of coke, taking the weights of the trains, the stoppages, and the speed into calculation, is as low as upon any line in the kingdom.—*Morning Herald.*

**RAILWAYS IN RUSSIA.**—The works on the railway from St. Petersburg to Moscow are being urged forward with extraordinary activity. In addition to peasants and workmen, 60,000 soldiers are employed, and the whole will be completed in the course of the autumn of next year. The Emperor having approved of the line to be taken by the railway from Warsaw to Moscow, orders have been given for the commencement of the works without delay.

## ON THE ARTIFICIAL PRODUCTION OF MINERALS, AND ESPECIALLY OF PRECIOUS STONES.

M. Ebelmen states, that the first results which he obtained related to minerals of the family of Spinelle. The method adopted by the author to effect the crystallisation of these compounds, is based on the property which boracic acid possesses of dissolving metallic oxides in the dry way, and the volatility of this acid at a high temperature. It occurred to him that, by dissolving alumina and magnesia, mixed in the proportions which constitute spinelle, in fused boracic acid, and exposing the mixture in open vessels to the high temperature of a porcelain furnace, that the affinity of the alumina for the magnesia might cause the separation of a crystallised aluminate, and the expulsion of the boracic acid. The proportions employed were about one part of fused boracic acid, and two parts of a mixture of alumina and magnesia, composed so as to constitute the compound  $Al^2O^3 MgO$ ; and from this to 200 of bichromate of potash were added to it. The ingredients, well mixed, were placed on platinum foil, in a cup of porcelain, and exposed to the highest temperature of the porcelain furnace of Sévres. A product was obtained, the surface of which was covered with crystalline facets, and the interior contained cavities sprinkled with crystals, the form of which was readily distinguishable with a glass. These crystals were rose-red, transparent, scratched quartz readily, and had the form of the regular octohedron without any modification. They were completely infusible by the blow-pipe. These characters, combined with the composition of the crystals as deduced from synthesis, appear to M. Ebelmen sufficiently conclusive as to their identity with spinelle.

By substituting the equivalent of protoxide of manganese for magnesia, a crystalline product was obtained in large laminae, exhibiting the form of equilateral triangles or regular hexagons. The author considers these as constituting the manganese spinelle  $Al^2O^3 MnO$ , which has not hitherto been met with in the mineral kingdom. Oxide of cobalt, substituted for magnesia, equivalents for equivalent, yielded crystals of a black-blue colour, in regular octohedrons. They also scratched quartz, but not so readily as the two preceding. In employing alumina and glucina in the proportions which constitute cymophane,  $Al^2O^3 GLO$ , a mass covered with crystalline asperities of great splendour was obtained. This product scratched quartz, and even topaz distinctly; it, therefore, possessed hardness, compared to that of natural crystallised cymophane. Certain silicates, which are infusible by the heat of our furnaces, appear also to be produced by the same processes. Thus, on fusing the elements of emerald with half their weight of boracic acid, at the same temperature as in the preceding experiments, a substance is obtained which easily scratches quartz, and its surface presents a great number of facets, the form of which is the regular hexagon. The author proposes to continue these experiments, but, at present, only states in addition, that it is possible to produce, at temperatures lower than those obtainable at our furnaces, diaphanous crystals, the hardness and external characters of which are analogous to those of precious stones; and he also concludes that many mineral species may be formed at a lower temperature than that required for their fusion.—*Comptes Rendus, Aug. 16.*

**ON THE PHYSICAL EFFECTS OF A JET OF STEAM.**—On Tuesday last, Dr. Bachhoffner delivered an instructive lecture on this subject at the Royal Polytechnic Institution. A model was exhibited of the means, used for years past, of producing a current of air in the mines of different countries; it consisted of a long tube, with holes perforated in the side at certain distances, and having a chamber at each end; the tube being placed perpendicularly in the shaft of the mine, and a stream of water passing through, it caused a current of air to be drawn down through the holes into the mine. It had been erroneously supposed, that a portion of the water was decomposed in its fall, and formed air. Dr. Young made inquiries into falling water, but it was merely in reference to sound. Mr. Davy was the first to investigate the laws of falling water, which he termed the lateral communication of fluids. In 1801, Mr. Boswell invented a blast for ventilation, and from which sprung the various modifications now in use—it consists of a tube, pointed at one end, conical at the other, which was placed in a perpendicular tube, so as to form the letter T, and put in such a position as to keep its conical end constantly to the wind—a current of air passed through with great rapidity, and carried with it the air within the tube. An illustration was also given of a highly important nature, which steam can now be applied to—namely, in producing a vacuum. A bent glass tube, filled with water, and having one of its extremities hermetically sealed, was brought in contact with a jet of steam, passing over the unsealed end, the water in the tube began to evaporate quickly, forming a vacuum in the tube; a similar experiment was tried with a large glass jar, but, in this case, it was merely connected by a flexible tube to the iron one, through which the steam passed—the air began immediately to leave the jar, and the water, in which it stood, began to rise.

**EXPLOSION OF A LOCOMOTIVE.**—On the 21st September, Vienna was alarmed by an explosion like that of a powder-mill; the report was caused by a locomotive engine, which burst in one of the engine sheds of the railway terminus, from Vienna to Gloggnitz, where it had just been placed, on its return from Gloggnitz. A piece of the engine, weighing 6 cwt., went through one of the walls, passed over the Matzendorf burying-ground, and fell in the principal street in the suburbs of Vienna. The report of the explosion was so loud, that the windows of several houses were broken; fortunately, this accident caused no injury to any person.

**BALLOONING IN BELGIUM.**—We noticed, in our last Journal, the untoward accident of M. Dupuis Delcourt, the aeronaut, and respecting whom great anxiety was felt; he has, we hear, effected his descent in safety near Mariembourg.

**A letter from St. Petersburg, of the 21st Sept., says:—**"On the 12th, at 5 p.m. M. Ledet, a young Frenchman, ascended from this city in a balloon, and, from that hour to this—nine days—no news of him, or his balloon, has been received, except that, on the following morning, some men, who were fishing in the lake of Ladoga, saw a balloon floating in the air above the lake.—A letter, of the 23d, states, that no news had then been received of the aeronaut; but his balloon had been found by some fishermen. The men, seeing it moving a little above the lake of Ladoga, put off in their boats to the place where it seemed likely to fall. They succeeded in dragging the balloon and the car into a boat. The car was found to contain its ballast; but there was neither the parachute, nor the great knife, nor the pistols, which M. Ledet had taken with him. It is probable that the aeronaut had tried to descend with the parachute on finding himself near the lake; but from nothing having been heard of him, it is feared that he has perished."

**EMIGRATION TO SOUTH AUSTRALIA.**—From a Parliamentary return just issued, it appears that the average cost of passage of emigrants from England to South Australia, in ships chartered by her Majesty's Colonial Land and Emigration Commissioners, from 1st January, 1846, to the present time, is computed at 37*l.* 40*s.* 10*d.*; the number of statute adults embarked in 15 ships being 3021; and the average cost of each adult, 12*l.* 7*s.* 7*d.* A statute adult is one person of the age of 14 years and upwards; or two persons between 1 and 14. This amount represents the net average cost of the conveyance and victualling of the emigrants, and is exclusive of gratuities allowed to the surgeons, superintendent, and officers of the ships, and other incidental expenses.

**EFFECT OF RAILWAYS ON TURNPIKES.**—A general meeting of trustees of Surrey and Sussex roads was held, at the Sessions-house, Newington, on Thursday, for letting the tolls arising from the gates and bars at Newington, Camberwell, Kennington, Vauxhall, Kingston, Croydon, East Grinstead, &c., which were put up at the sum of 32,250*l.*, for which they were let the previous year. Much interest was excited on this occasion, as, in consequence of the extension of the line of the South-Western Railway from Nine Elms to the York-road, which will cause a loss of revenue of about 6000*l.* per annum, it was thought that a reduction would be proposed to that amount. The tolls were put up, but there was no offer for them; and it was stated in the course of the sale, that during the last four weeks there had been a falling off of 100*l.* per week, in consequence of the railways south of the Thames.

**NEW DESCRIPTION OF FUEL.**—We learn that a discovery has been made, which promises to be of great advantage to all descriptions of manufacturers and artisans who use fuel either for the production of steam, for the fusion of metals, or for scientific and manufacturing processes. The inventor produces fuel of several different descriptions suitable either for domestic purposes, for engines, or for the production of great heat, and peculiarly valuable for the furnaces of foundries, as even at a white heat, with most perfect combustion, the material is consumed but very slowly. The great advantage of this material at the present time, when so much attention is paid to the health of large manufacturing communities, is, that it burns without any visible smoke, or with so little, that it is scarcely perceptible. Its introduction into general use will, therefore, supersede all the numerous expensive contrivances for consuming smoke which have hitherto been brought before the public, and used, for the most part, with but small success. In steamers it will be particularly valuable, as, we understand, it burns readily, with great and durable heat, and does not send up even the smallest quantity of that nauseous and unwholesome black vapour which occasionally poisons the atmosphere of our river.—*Liverpool Albion.*

**NEW IRON-WORKS.**—A new forge, lately erected at Shut End, has just commenced working; it belongs to James Foster, Esq., and is the most complete iron manufactory within many miles, having on every side all the available resources and advantages so highly prized in connection with such works. It has an abundant supply of coal, and four blast-furnaces in full work, which will furnish a continual supply of pig-iron for this and other forges belonging to the gentleman whose property it is, and who has a vast number of men at the present moment in his employ at his various manufactories.—*Birmingham Journal.*

## ORIGINAL REGISTRY OFFICE, FOR THE SALE AND PURCHASE OF MINING SHARES.

No. 26, THREADEWELL-STREET, LONDON.  
CROSSMAN, SOMMERS, AND CO., AGENTS.

### SHARES FOR DISPOSAL.

Devon and Courtenay Consols	Princes Royal (St. Agnes)
East Birch Tor	Gonamena
New East Crowndale	Trelawney
East Wheel Rough Tor	South Wheel Sophia
Wheel Essa	Wheel Susan
North Wheel Camel	Victoria Tin Mining Company
Wheel Sisters	Wheel Ann (Bridford)
Great Wheel Rough Tor	Wheel Barbara

West Tolgus West Seton Gonamena

## WHEEL CONCORD MINING COMPANY.

Offices, 4, King-street, Cheapside, London, Oct. 5, 1847.

At a SPECIAL MEETING of the adventurers in this mine, held pursuant to circular, dated 30th Sept., at the offices, as above, for the purpose of taking the financial affairs of the mine into consideration.—It was resolved,—  
That a circular be issued to all the shareholders now in arrears of calls, requesting them to pay the same forthwith, to the bankers of the company; and, also, with a view of ascertaining what shareholders have paid their calls to the purser, or to any other party on his behalf.  
Signed, by order of the meeting,  
JAMES CROFTS, Secretary.

## SWANSEA DOCK COMPANY.—EXTRAORDINARY GENERAL MEETING.

Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of this company will be HELD at the Guildhall Coffee-house, King-street, in the city of London, on Wednesday, the 30th day of October inst., at Twelve o'clock at noon, for the purpose of taking into consideration the report of the committee appointed at the general meeting of the shareholders, held in London on the 31st day of August last.

Also, for the purpose of passing resolutions increasing or reducing the number of directors of the company, and the order of rotation in which such increased or reduced number shall go out of office, in pursuance of the provisions of the Special and General Acts of Parliament constituting and regulating the company.  
Also, for the purpose of taking into consideration certain bye-laws and regulations, suggested to have been passed by certain directors of the company at Swansea, on the 19th day of August last, and to pass resolutions confirming, altering, or rescinding the same, or any portion thereof, as to the meeting shall be deemed proper.  
By order of the board of directors,  
A. C. HOWDEN, Assistant Secretary.

3, Lothbury, London, Oct. 5, 1847.

## SWANSEA DOCK COMPANY.—EXTRAORDINARY GENERAL MEETING.

Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of this company will be HELD at the company's office, in Quay Parade, Swansea (from whence it will, for convenience, be immediately adjourned to the Castle Hotel, Swansea), on Thursday, the 21st day of October next, at the hour of Twelve o'clock at noon, for the following purposes:—

1. To receive the report of the committee appointed by the shareholders at their first general meeting.
  2. To determine as to the reduction of the number of directors of this company to nine, or such other number as may be considered desirable—and as to the particular directors to be discontinued, consequent on such reduction; also, to determine the order of rotation in which such reduced number of directors shall go out of office.
  3. To determine as to the amount, if any, to be paid to the directors who have usually attended the London meetings of this company, as a consideration for their past services and disbursements.
  4. To determine as to the discontinuing the London solicitor, and the London offices and offices of this company.
- And, to adopt such resolutions, and to do such other acts relating to the several matters above-mentioned, as may then be determined on or agreed to.  
By order of the board of directors,  
Dock Office, Swansea, Sept. 30, 1847.  
GEO. GRANT FRANCIS, Secretary.

## CAMBRIAN AND GRAND JUNCTION RAILWAY COMPANY.

THE OFFICES OF THIS COMPANY ARE REMOVED TO No. 39, GREAT SUTTON-STREET, CLERKENWELL, and the FINAL DIVIDEND is receivable daily, from Eleven to One o'clock.  
JOSEPHUS FERRIS, Secretary.  
Dated October 7, 1847.

## CUNNINGHAM & CARTER'S PNEUMATIC RAILWAY SYSTEM.

THE attention of the scientific public is requested to this SYSTEM, which unites great simplicity with economy, and is entirely free from those dangers and consequences which are the inseparable attendants on the use of the locomotive engine.  
THE MODEL MAY BE VIEWED, and every information given, on application to Mr. Cunningham, Auction Mart Coffee-house; or Mr. Carter, engineer, Peak-hill, Sydenham.

## TO ENGINEERS, RAILWAY AND STEAM-BOAT COMPANIES.

AND THE OWNERS OF STEAM-ENGINES IN GENERAL.  
W. & C. MATHER beg to call the attention of the above parties to their  
PATENT ELASTIC METALLIC PISTON.

From the great satisfaction it has already given, they can, with confidence, recommend it. The following are some of its excellent properties:—  
1. The great, equable, and mild elasticity; its being perfectly cylindrical and self-adjusting—thereby enabling it to yield, with the least possible friction, to any inaccuracies of the cylinder, whether oval or taper.  
2. Its extreme simplicity and lightness—the packing consisting of only TWO PIECES OF METAL, having vertical and horizontal elasticity in due and proper proportion, independent of each other—the horizontal elasticity being also independent of screwing down THE JOKE RING OR COVER.  
3. It takes the least possible space; and is, therefore, well adapted for air and water pumps.

The above patent was unsuccessfully opposed by Mr. Goodfellow, the patentee of a piston, having three angular rings, of a bevil form.  
The Solicitor-General conceived that there was not the slightest similarity between them, as may be seen from the subjoined letter from Mr. Carpmail, through whom this patent was taken.

W. & C. M. can refer to upwards of 100, made since the date of the patent (April, 1846), each of which is giving entire satisfaction. They bear to call attention to the fact that, in a number of cases, they have replaced those made of three angular rings of the bevil form, a description of which appeared in the *Mining Journal* of Saturday, October 3, 1847.

[LETTER REFERRED TO.]  
April 2, 1848.  
DEAR SIR,—Mr. Solicitor-General took the hearing in your patent yesterday, at the Privy Council, and decided that the invention did not interfere; we are, therefore, proceeding with the patent.  
We are, your obedient servants,  
W. & C. MATHER.

The object of publishing the above letter, is to convince parties wishing to use W. & C. Mather's piston, that they have nothing to fear from the caution which accompanied the advertisement referred to, or the unfounded reports which are industriously circulated from the same quarter.  
Locomotive and other pistons guaranteed for twelve months.  
Salford Iron Works, Manchester, Sept. 1847.

## TO ENGINEERS AND BOILER-MAKERS.

LAP-WELDED IRON TUBES, FOR MARINE AND LOCOMOTIVE STEAM-BOILERS.  
TUBES FOR STEAM, GAS, AND OTHER PURPOSES.  
ALL SORTS OF GAS FITTINGS.

## THE BIRMINGHAM PATENT IRON TUBE COMPANY.

42, CAMBRIDGE-STREET, BIRMINGHAM; & SMETHWICK, STAFFORDSHIRE.  
MANUFACTURE BOILER AND GAS TUBES, under an exclusive License from Mr. R. Prosser, the patentee. These tubes are very extensively used in the boilers of marine and locomotive steam-engines in England and on the Continent—are stronger, lighter, cheaper, and more durable than brass or copper tubes, and warranted not to open in the weld.  
42, CAMBRIDGE-STREET, CRESCENT, BIRMINGHAM.  
WORKS—SMETHWICK, STAFFORDSHIRE.  
LONDON WAREHOUSE—No. 68, UPPER THAMES-STREET.

**ENGINEERS OF THE ROYAL NAVY.**—The following new regulations have been made relative to the promotion of engineers brought up in the service:—Third-class assistant engineers to complete three years' service at sea before they are eligible to be examined for, or promoted to, the second-class. Second-class assistant engineers to complete two years' service at sea before they are eligible to be examined for, or promoted to, the first-class. First-class assistant engineers to complete three years' service at sea before they are eligible to be examined for, or promoted to, chief engineer. Engineers, therefore, who have been brought up in the service, will not be eligible for promotion to the rank of chief engineer to the Royal navy, until they shall have completed eight years' service at sea as assistant engineers.

**THE ICHTHYOSAURUS FOR THE MANCHESTER GEOLOGICAL SOCIETY.**—We have already mentioned the fact, that a fine specimen of this fossil, named the *ichthyosaurus*, as partaking of the most striking characters of the fish on the one hand, and the saurian, or lizard, tribes on the other, had been jointly purchased by James Heywood, Esq., M.P., F.R.S., and Mr. George Hatfield, for the sum of 100*l.*, and that it was to be presented to the Manchester Geological Society. We may now add, that the specimen is a very fine one, measuring, when duly arranged, about 16 ft. in length; the whole of the head in excellent preservation; the body and vertebra generally in a tolerably good state; the hinder part of this fossil animal being the least perfect.—It was found in the alum shale at Sand's End, near Whitby, on the property of the Marquis of Normanby, of whom it was purchased, as already stated, by the gentlemen named. We understand, that this fine fossil has been packed in seven boxes, and it is expected will reach Manchester in the course of this week.

London:—Printed and Published, weekly, by HENRY ENGLISH, at the Office, No. 26, FLEET-STREET, in the city of London, where all Communications and Advertisements are requested to be forwarded.—addressed to "the Editor"—post-paid.  
October 9, 1847.  
\* It will at all times save much delay and inconvenience, if communications are directed simply  
TO THE EDITOR,  
Mining Journal Office,  
26, FLEET-STREET, LONDON.  
And Post-Office ORDERS, &c., must be made payable to WILLIAM SALMON MANSFIELD, as acting for the proprietors.